Research Project Report

On

"Abuse of Dominance in Digital Markets"

Submitted for the partial fulfilment of the Award

Of

Master of Business Administration

DEGREE

(Session: 2021- 2022)

SUBMITTED BY

**** Your name ****

****roll number****

UNDER THE GUIDANCE OF

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Student Declaration

I **"Your name"** hereby declare that the work which is being presented in this report entitled **"Abuse of Dominance in Digital Markets"** is an authentic record of my own work carried out under the supervision of **Dr. "name".**

The matter embodied in this report has not been submitted by me for the award of any other degree/ Diploma/ Certificate.

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This is to certify that the work which is being presented in this report entitled **"Abuse of Dominance in Digital Markets"** is an authentic record of the student carried out under my supervision. The statements made by the candidate are correct to the best of my knowledge.

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Acknowledgment

On the very outset of this report, I would like to extend my sincere & heartfelt obligation toward all the personage who has helped me in this endeavour. Without their active guidance, help, cooperation & encouragement, I would not have made headway in the project.

I am ineffably indebted to **{Prof. Name}** for their conscientious guidance and encouragement to accomplish this assignment.

I am extremely thankful and pay my gratitude to my faculty **"faculty name"** for valuable guidance and support on the completion of this project in its present.

I extend my gratitude to the [**Institute / College name] (MBA Institute)** for giving me this opportunity.

I also acknowledge with a deep sense of reverence, my gratitude towards my parents and member of my family, who has always supported me morally as well as economically.

At last but not least gratitude goes to all my friends who directly or indirectly helped me to complete this project report.

Thanking you

Date:

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Introduction

Competition in digital markets has become a major focus of the competition policy community, the media, and even political campaigns. The size of digital firms and their importance in the economy have in particular attracted significant attention. It is no surprise, therefore, that one of the themes of these discussions is the enforcement of abuse of dominance laws.

The idea that "big is not bad" is an established principle of competition policy. A firm's size may be the result of innovation, a novel business model, or simply more efficient operations. In other words, it can be the reward for aggressive competition – something that is beneficial for consumers, and economic productivity more broadly. However, competition policy has identified some strategies that can be used by dominant firms in a market in order to enhance or protect their market power. In contrast to innovation, for example, these strategies can harm consumers, and lead to broader economic damage.

The potential for these strategies to arise in digital markets has become a major source of concern. Indeed, many authorities are beginning to investigate these concerns. For example, 30 out of 39 respondents to a recent International Competition Network ("ICN") survey reported opening abuse of dominance investigations in digital markets, and 17 of these led to enforcement action (ICN, 2020[1]).

Competition law has established legal and economic frameworks for assessing abuses of dominance. These frameworks cannot, however, address every digital market policy concern. Alternative competition policy tools, including merger control and advocacy, may be more appropriate in some cases. Further, some concerns may not be easily addressed within a competition policy framework at all. The debate about abusive conduct by large digital firms is therefore a microcosm of the broader discussion about competition in digital markets.

This paper seeks to illustrate how abuse of dominance enforcement can operate in digital markets, with reference to the legal and historical context of a jurisdiction, the economics associated with the various theories of harm, and the potential modifications to existing frameworks proposed to better reflect the conditions of digital markets.

The unique, or at least relatively more common, characteristics of digital markets are well documented. They include:

- **Their size** – for example, 7 out of the 10 largest companies in the world provide digital products (PwC, 2020[2]).
- Markets that are often **multi-sided** (they bring together different groups of consumers via a platform) or **interlinked** (for example, hardware and software are complementary products).
- Products often provided to consumers at **zero or subsidised prices**, using revenue from other sides of a market (e.g. using advertising or data sales), or provided alongside paid premium offerings (the so-called "freemium" business model).
- **Network effects**, defined as "the gains enjoyed by consumers of a product when more consumers use that product" (OECD, 2019, p. 6[3]). For example, users of a social network experience a benefit, or positive externality, as more of their acquaintances set up accounts on the network.[1]

These characteristics have significant implications for abuse of dominance cases. In particular, they can give rise to more concentrated markets, which could mean that dominance is relatively more common, and that it may become more entrenched (Stigler Committee on Digital Platforms, 2019, p. 43[4]). Further, since scale and multi-market strategies are key in digital markets, the effects of business strategies, both pro- and anticompetitive, can be rapidly multiplied. Network

effects may also be used to amplify competitive harms from abusive conduct (Iacobucci and Ducci, 2019[5]), although some have questioned whether their role is overstated (Manne and Wright, 2011[6]). Finally, the rapid pace of change in these markets can make it difficult to understand how likely it is that a firm will face competitive pressure in the near term.

In sum, digital markets pose a fundamental challenge for abuse of dominance enforcement. On the one hand, they may be more likely to manifest the kind of harm that this law enforcement instrument was designed to prevent. On the other hand, the analysis of this harm can be potentially complex, and give rise to the risk of error (resulting in either over- or under-enforcement). This paper will explore these challenges, and set out some strategies that authorities can consider in their casework. It is organised as follows:

- **Section 2** describes how the legislative and historical context of abuse of dominance cases can affect enforcement in digital markets.
- **Section 3** discusses the challenges and evidence applicable to establishing dominance in digital markets.
- **Section 4** describes the theories of harm applied in digital abuse of dominance cases, both traditional and novel.
- **Section 5** sets out the proposals being made to modify abuse of dominance frameworks to grapple with digitalisation, and potential alternatives including sector regulation.

The legislative and historical context of abuse of dominance cases

The term abuse of dominance encompasses various legislative provisions in different jurisdictions, often with differing terminology but with a similar core objective, including: abuse of dominance in the EU,[2] India[3] and South Africa,[4] monopolisation in the US,[5] private monopolisation in Japan,[6] relative practices in Mexico,[7] misuse of market power in Australia,[8] and anticompetitive conduct in Brazil.[9]

While the specific legal provisions of many competition laws are similar (including the US Sherman Act and European Treaty on the Functioning of the European Union), their application can vary significantly. This variation can emerge for a range of reasons, namely: differing priorities and perspectives among competition authorities; significant differences in interpretation by courts; and divergent historical, legal and constitutional philosophies (see, for example, Fox (2014, p. 150[7])). Thus, differences in the types of cases undertaken and their outcomes across jurisdictions should not be a surprise. As stated by Ezrachi (2018, p. 25[8]): "Criticising inconsistent outcomes in abstract, with no regard to the different foundations and goals, is akin to comparing apples and oranges".

The differing approach in abuse of dominance cases across jurisdictions has been illustrated in cases involving digital markets. This section will explore some key elements of abuse of dominance legal frameworks that have led to differing outcomes, and which have been prominent in recent digital market cases.

Formalistic versus effects-based analyses

Generally, potential abuses of dominance are not considered *per se* illegal – in other words, there are no prohibitions on a certain type of conduct in all circumstances. However, there are variations in the degree of analysis required. The approach taken by a jurisdiction can be considered either

formalistic or *effectsbased.* A formalistic approach still requires case-specific analysis to determine whether a firm is dominant. However, once a firm is deemed to be dominant, an infringement can be found *per se* illegal. In other words, there is no obligation for a competition authority to establish consumer harm. Relatively few jurisdictions use an entirely formalistic framework. For example, a formalistic approach is nominally used in India (Competition Authority of India, 2017[9]), but effects-based analysis, including a recognition of efficiencies, has been used in some cases (Malik et al., 2019, pp. 457-459[10]). Other jurisdictions apply a formalistic approach to only certain types of conduct, for example, excessive pricing and refusing access to an essential facility in South Africa.[10]

Formalistic approaches could have some advantages for competition authorities. In particular, they can reduce the resource requirements of abuse of dominance cases, and may accelerate the lengthy and resource-intensive process of bringing these cases. Further, they could provide greater certainty for market participants. However, they still require market definition exercises that can be complex, and thus do not fully prevent concerns about subjective decision-making (Malik et al., 2019[10]). They also risk overenforcement, namely finding a firm's conduct to be an infringement even when it could have procompetitive justifications. Thus, some courts, practitioners and commentators have called for an effects-based abuse of dominance framework that recognises the risk of enforcement errors. Box 1 describes these errors.

Box 1. Error costs in competition enforcement

As will be described below, abuse of dominance theories of harm are case dependent. In particular, (1) the conduct is only likely to result in harm if the firm in question has market power, and (2) even when a firm has market power, economic theory suggests the impact on the market will depend on its specific characteristics. Thus, abuse of dominance cases require competition authorities, and potentially courts, to conduct assessments in the presence of ambiguity. It can be difficult to distinguish aggressive competition from anticompetitive conduct, for instance. In particular, it is often not straightforward to compare harms and efficiencies and estimate the overall effect of conduct on consumers, given these two variables are likely not to be measured in the same way, or at least not with significant precision (Hovenkamp, 2016[11]). The situation in digital markets may be particularly complex, given the rapid evolution of markets and blurring of market boundaries. This has led competition law scholars and practitioners to consider the risks of error in competition law proceedings (Easterbrook, 1986[12]). These errors are sometimes categorised as:

- **Type 1 errors**, which is the risk of a false positive, or the finding of harm to competition when there is none (over-enforcement)
- **Type 2 errors**, which is the risk of a false negative, or the finding that no harm to competition occurred when it has in fact occurred (under-enforcement)

There is an ongoing debate about how competition authorities should manage these risks. Some emphasise the potential costs of over-enforcement, and caution against unjustified enforcement interventions that may result in consumer and broader economic harm (see, for example, Manne and Wright (2011[6])). This perspective can also be associated with the idea that competition authorities should "first, do no harm" when intervening in markets.

To help categorise different abuse of dominance theories of harm based on the risk of type 1 and type 2 errors, Condorelli and Padilla (2019[13]) propose the following:

- When the risk of type 1 errors is extremely unlikely, the conduct should be considered *per se* illegal (that is, an analysis of the effects is not needed).
- When there is a risk of both type 1 and type 2 errors, but the expected cost of type 2 errors is higher – that is, the potential consumer harm is large, the conduct should be subject to a rebuttable assumption of illegality. In other words, it should be assumed to be anticompetitive, but a dominant firm could avoid an infringement if it could demonstrate the efficiency effects of its conduct. The authors suggest this may be the case when a market is likely to "tip" into a monopoly, for example (Condorelli and Padilla, 2019, p. 38[13]).
- When there is a risk of both type 1 and type 2 errors, but the expected cost of type 1 errors is higher – that is, the potential efficiencies are large, the conduct should be subject to a rebuttable assumption of legality. In other words, it should be assumed to be procompetitive, but a competition authority could prove an infringement by showing the conduct is harmful.
- When the risk of type 1 error is considered extremely likely, the conduct should be legal in all circumstances.

The theories of harm associated with abuse of dominance cases may often fit into the middle two categories – that is, they are not always likely to result in harm, or a lack of harm. Condorelli and Padilla (2019, p. 37[13]) recommend an effects-based approach, and specifically the use of rebuttable presumptions, depending on the likelihood of harm. An effects-based approach is in place in many jurisdictions and involves a weighing of both harm and

efficiencies without presumptions. In particular, Padilla (2018[14]) suggests that above-cost predatory pricing, refusals to deal, margin squeeze and tying and bundling should be subject to a rebuttable presumption of legality, whereas exclusive dealing could be subject to a rebuttable presumption of illegality.

Thus, the difference between formalistic and effects-based approaches can be explained by different perceptions about the risk of enforcement errors. These two approaches can also be contrasted in terms of their focus. In particular, a formalistic approach could be classified as one that focuses on protecting the *process of competition*, and inferring indirectly that consumers will be harmed (Jennings, 2006[15]). By contrast, effects-based approaches focus on cases in which direct harm to consumers can be demonstrated.

The debate regarding formalistic versus effects-based approach has been particularly active in Europe. In response to this debate, the European Commission released in 2009 its abuse of dominance enforcement priorities (2009[16]), which emphasised the importance of effects and a focus on consumer welfare. This guidance is not binding, but has been viewed by the court as a 'point of reference' (Court of Justice, 2010[17]). Some have argued that, in contrast to the Guidance document, the court continued to take a more formalistic approach to abuse of dominance cases (Ibáñez Colomo, 2016, p. 24[18]). However, in a 2017 decision involving Intel, the European Court of Justice clarified the need for an effects-based analysis, including consideration of offsetting efficiencies, with respect to a case involving exclusivity agreements and rebates.[11]

In the US, abuse of dominance cases tend to be analysed under the rule of reason – that is, an effectsbased approach. This was not always the case. The prevailing view during the 1940s to the 1970s was that the rule of reason approach was not practical and during this time, the US courts expanded the category of per se prohibitions (OECD, 2017[19]). However, from the 1970s, the US moved away from this formalistic approach and found that certain conduct subject to *per se* prohibitions had in fact potentially or mainly pro-competitive effects. Thus, the approach was adapted to reflect the risks of type 1 error. Today the courts apply a burden shifting mechanism in implementing the rule of reason (although no abuses of dominance are subject to a rebuttable presumption of anticompetitive effects). The burden shift replaces, in most cases, the balancing

act between pro and anti-competitive effects inherent in a pure rule of reason exercise (United States, 2017, p. 8[20]). Such a balancing act has been criticised as being complicated and hard to implement given the lack of appropriate tools (Padilla, 2018[14]).

How differing approaches affect digital abuse of dominance cases

The difference in the European Commission and US approaches is illustrative of how a different context and framework can affect decisions in digital abuse of dominance cases. First, there is a greater focus on meeting the evidentiary burden for effects, particularly for tying cases, in the US than the EU (Fox, 2014, p. 150[21]). More fundamentally, some commentators argue that the EU "is also concerned with maintaining a level playing field for competitors which is not as significant a concern in the United States" (Calder et al., 2003, p. 383[22]). In the US, "a monopolist's duty is limited to avoiding conduct that is intended to maintain or expand its position where that conduct cannot be justified on business or efficiency grounds" (Calder et al., 2003, p. 384[22]). This has led to claims that the EU protects competitors while US competition law focuses on protecting competition - a characterisation that is subject to significant debate, including with respect to digital markets (see, for instance, Werden and Froeb (2019[23]) and Coppola and Nazzini (2020[24])). More broadly, the US seeks to manage the risk of over-enforcement by focusing on impacts on price and output – in other words, market outcomes rather than the competitive process (Khan, 2017, p. 717[25]). Finally, the concept of an exploitative abuse of dominance (when a firm uses its dominance to impose unfair prices or conditions on consumers – see Section 3 below), which has been the subject of some recent cases in Europe, does not exist in the US.

These differing approaches have been illustrated in digital abuse of dominance cases. In particular, none of the European Commission's recent abuse of dominance cases in digital markets have had a US equivalent (although some, for example, the Google search scraping concerns described in

Section 3 below, were discontinued after changes to the conduct in question). For example, in response to the EU's 2007 Microsoft decision (regarding conduct for which there was no case brought by the US authorities[12]), the US DOJ's Assistant AG underlined the difference in a press release, saying that "In the United States, the antitrust laws are enforced to protect consumers by protecting competition, not competitors" (US Department of Justice, 2007[26]). However, at the time of writing of this paper, news of US monopolisation investigations into the conduct of dominant digital platforms suggests that some convergence may be taking place (see, for example, Shepardson (2020[27])).

In 2017, the European Commission fined Google €2.42 billion for abusing its dominant position in the general search market by favouring its own vertical comparison shopping service in its search results page. This case made reference to a previous decision by the EU Court of Justice, *Continental Can,* which found it was not necessary to show direct effects on consumers, but rather that it was sufficient to demonstrate that the conduct in question harmed competition (Holzweber, 2018, p. 360[28]). By contrast, the US FTC conducted an investigation into Google's search practices but ultimately closed its investigation into allegations of Google's "search bias" (Federal Trade Commission, 2013[29]). The FTC found that changes in how Google displayed its content (through algorithm and design changes) improved the quality of the product (search results) and were not anticompetitive nor harmful to consumers.

Key considerations regarding the legislative and economic context of abuse cases

- Variations in the approach to abuse of dominance cases among jurisdictions are due to differences in: priorities and perspectives among competition authorities; interpretation by courts; and historical, legal and constitutional philosophies. These differences have been illustrated by the approaches by different authorities to digital abuse of dominance cases.
- Some jurisdictions apply a formalistic approach to abuse of dominance cases, according to which, certain form or conduct is automatically considered an infringement if it can be proven that a firm is dominant. Other jurisdictions use an approach focused on the effects of the conduct, and may apply a presumption that the conduct is harmful or not harmful. Some jurisdictions use different approaches depending on the type of conduct.
- One method of setting an optimal approach could be to determine the risk of both over- and under-enforcement related to each type of conduct by a dominant firm, and then determine whether the conduct should be *per se* illegal, subject to a rebuttable presumption of harm, subject to a rebuttable presumption of no harm, or never considered an infringement.
- There are also differences across jurisdictions in terms of the focus of abuse of dominance cases. In particular, some jurisdictions consider the harm to the competitive process, which is deemed indirect evidence of consumer harm, whereas others require direct evidence of consumer harm.

Establishing dominance in digital markets

Abuse of dominance provisions in competition law impose special obligations on dominant firms with respect to their business decisions. These special obligations are generally rooted in economic insights about market power, which can be defined as "the ability of firms to unilaterally raise prices above, or quality below, the competitive level" (OECD, 2019, p. 21[3]) - and to maintain these conditions (White, 2007[30]). Market power can be manifested in both static terms (e.g. prices) as well as dynamic terms (e.g. less effort. In particular, market power arises when a firm is not constrained from unilateral price or quality decisions by competitors or consumers switching to alternative sources of supply. Market power can be the result of a range of factors, including innovation, entry barriers, intellectual property rights and regulation.

While case law, legislation and guidance varies significantly across jurisdictions, dominance for the purposes of competition enforcement can generally be considered to be a particular form of market power that is both (1) lasting (rather than transitory) and (2) relatively unrestrained by competitors, both actual and potential, as well as by consumers.[13] In other words, while some competition legislation and case law considers alternative indicators of dominance, such as market share, they are just that – indicators. The core economic rationale behind abuse of dominance theories of harm is tied to market power. For example, the UK's guidance on abuse of a dominant position specifically equates dominance to "substantial market power."[14]

In some jurisdictions, such as Japan and the US, the concept of monopolisation is used rather than abuse of dominance. A similar logic rooted in market power applies – firms do not need to be monopolists to be subject to monopolisation laws, but must have "significant and durable market power" (which would have been either attained or strengthened as a result of the conduct in

question).[15] Thus, the term abuse of dominance in this paper will include monopolisation, unless otherwise noted.

Dominant firms are subject to particular restrictions, or responsibilities, because of their ability to follow strategies that may result in consumer harm. Specifically, a firm with substantial market power may have the ability to take advantage of entry barriers and their market position in order to exclude competitors, or impose exploitative terms on consumers or downstream businesses. If a firm without market power were to follow a similar strategy, it would not have a similar effect on competition and consumers. Competitive pressures will prevent a firm without market power from predatory pricing, or imposing a bundle of products on consumers who would prefer to purchase them separately. In particular, without market power, these strategies would harm a firm's long-term revenues.

Other types of conduct that can constitute an abuse of dominance may in fact be procompetitive when carried out by firms without market power. For example, exclusivity agreements can be an effective strategy for new entrants to establish themselves by gaining access to a distribution network or user base. In digital markets, this could mean obtaining a sufficiently large user base on one side of the platform in order to attract users on another side (where there are cross-platform network effects[16]). Thus, the presence of market power can determine whether a given business strategy is procompetitive, benign or anticompetitive. As a result, it is essential to understand the timing of a given business strategy – is the strategy the reason why a firm became dominant, in which case it would not be an abuse of dominance in some jurisdictions (such as the EU)? Alternatively, was the strategy implemented after the firm became dominant, in which case it serves to protect or take advantage of its position? (see, for example, the discussion in Siciliani (2019[31])).

This section will explore the factors that give rise to dominance in digital markets, and the techniques that can be used to identify it.

Market definition

Dominance refers to the position a firm holds within a specific product and geographic market. Thus, abuse of dominance cases often require a market definition exercise, particularly in jurisdictions that require it in their competition legislation. The core concepts of market definition in abuse of dominance cases are the same as those applied in merger cases.[17] However, care must be taken when applying analytical techniques such as the hypothetical monopolist test in markets whose conditions may already have been shaped by market power (see, for example, White (2007[30])).

There are several unique challenges associated with market definition in digital markets. The sections below, excerpted from OECD (2019[3]), explore these challenges and some techniques to address them.

Non-price dimensions of competition

A key challenge for market definition in digital markets is avoiding an exclusive focus on price as a dimension of competition. In digital markets, price may not be the only, or even the most important, dimension of competition. This is most vividly illustrated when consumers can access digital platforms at a price of zero. Considering the various other parameters on which firms compete, such as innovation or various dimensions of quality, however, can be challenging.

OECD (2018[32]) emphasises the need for competition authorities to (i) determine relevant dimensions of competition based on the characteristics that consumers value, (ii) consider the relationship between different dimensions of competition and associated trade-offs (e.g. price

versus quality) in assessing competition, and (iii) consider incorporating non-price competition into market definition. On the latter point, while there are some quantitative adaptations to price-based market definition tools, such as SSNIP tests, the requisite data will be available in only a few cases. Thus, a sound understanding of consumer preferences, elasticity, and substitution, either using surveys or internal firm documents about expected consumer behaviour, can be used to conduct a qualitative market definition approach that builds in nonprice competition. The hypothetical monopolist test can be used to guide this assessment – i.e., starting with a narrow market to which products are then added to consider the boundaries of the market. Authorities should use caution to ensure that the dimensions considered are current or potential dimensions of competition, in order to avoid using only product characteristics to define markets, which can fail to take account of competitive dynamics.

Non-price characteristics can also have an important role in the geographic scope of a market. For example, geo-blocking, language constraints and cultural factors may lead to national, as opposed to cross-border, market definitions, depending on the specific conditions of the market (see OECD (2016[33])). At the same time, in many cases, digital markets may involve broad geographic areas, given that many products can be accessed or purchased online (in contrast to physical retail locations).

Defining one or multiple markets

Some digital markets involve platforms and thus are multi-sided, meaning they connect different groups of consumers together. One of the main questions that arise in market definition for digital platforms is whether to define one or multiple markets. Put differently, an authority will need to decide whether the different sides of a market participate in different interrelated markets or a single market. The economics of platforms suggests that a firm either has market power over the

entirety of a multisided market or it does not – it is not possible to be dominant in one side of the market but face competitive pressures on the other side (OECD, 2018[34]). However, if an authority opts to define multiple separate markets, its ability to reflect this fact may be limited.

A single market definition may be preferable, all else equal. In particular, transaction-matching platforms (e.g. online hotel booking services) could constitute a single market, given that they provide a similar service (finding a match) to different groups of consumers, both of which benefit from cross-platform externalities (per OECD (2018[34])). In such cases, market shares may not be meaningful, or it may be impossible to calculate them given the incorporation of both sides of the platform into the market.

While the situation may be more complex for attention-providing platforms (e.g. video streaming services), given that externalities may not run in both directions, a single definition could still be considered – particularly if necessary to reflect efficiencies accrued on one side or another. However, even if separate market definitions are established, the important relationships between the sides of a platform should be taken into account in the competitive assessment.

Evidence and analytical tools for defining digital markets

Overcoming the challenges associated with digital market definition, ranging from zero prices to rapid change, requires several strategies by competition authorities; namely:

- **Collecting the right evidence from the parties:** Internal documents can be particularly relevant for determining relevant dimensions of competition (e.g. executive presentations, emails regarding competitive positioning, and strategic plans), since they provide a clear picture of how the firm(s) viewed competition prior to an authority's review. These documents can be useful to understand, for example, the metrics used by a firm to assess their relative position. Some internal documents are more useful than others, for example

older documents may be less informative given the rapid evolution of digital markets and business strategies.

Firms may also hold analysis that could be repurposed for market definition purposes. For instance, if a firm has contemplated a price increase or quality decrease, it may have assessed the potential demand response on different sides of the market and the impact on profitability.

- **Obtaining third party and consumer survey evidence:** In digital markets where price may not be a relevant metric of competition on at least one side, competition authorities may need to rely on alternative evidence. Consumer surveys, or reports from industry and investment analysts, can help identify potential parameters of competition. Once these parameters have been identified, surveys can be used to try to gauge demand elasticity with respect to these parameters. This information could then be put into a SSNIP test framework, as described below.

  Industry and investment analysts can also be helpful sources of information about the future evolution of the market, which may be rapidly changing. For example, competition authorities may face the challenge of assessing whether various social networking and content platforms are all competing in the same market. Some have argued that these platforms compete for user attention (see, for example, Prat and Valletti (2018[35]), Evans (2020[36]) and Wu (2017[37])). Determining how broad the market definition should be requires an understanding of the substitutability of these platforms in the minds of consumers, and how it is evolving given rapid changes in platform functionality and features.

- **Adapting the SSNIP test:** As described in OECD (2018[32]), the small but significant non-transitory increase in price (SSNIP) test must be adapted before being applied in platform

markets. This is because of the interrelationships between different sides of the platform. In particular, to correctly apply this analysis, an authority would need to: (i) assess the change in demand on one side of the platform to a SSNIP, (ii) predict the change in demand on the other sides in response, (iii) determine what the market-balancing prices on these other sides would be in response to the change in demand. The exercise would then be repeated for each side of the market, and with a simultaneous increase in prices on both sides. Where there are zero prices, the SSNIP test on the zero price side of the market would not generate meaningful results. Thus, it would need to be conducted on the basis of the total costs of a transaction.

Completing a SSNIP test with quantitative methods could be demanding, as it would require a reliable estimate of demand elasticities and the value of the cross-platform network externalities. An alternative for when non-price competition is important could be a small but significant non-transitory decrease in quality (SSNDQ) test, but this has rarely been applied quantitatively and is demanding in terms of data.

However, the SSNIP and SSNDQ tests may still provide a useful discipline to qualitative analysis supporting a market definition – particularly to avoid an approach that relies solely on platform characteristics, which is unlikely to be informative.

Indicators of Dominance

It is not always clear how much market power is needed for a firm's position in a market to be considered dominant, and how this is measured. There is no simple rule for making this

determination, as the characteristics of each market and the factors leading to market power differ across markets. Some potential indicators of dominance in digital markets are described below, namely direct indicators (based on an assessment of substitutability) and indirect indicators (based on the identification of entry barriers, profitability and market shares).

Substitution

A dominant position results from a lack of suitable alternatives in a market – specifically, consumers do not have access to substitutes for the firm's products, and there are no potential competitors with the capability to enter the market rapidly enough to constrain the dominant firm. In other words, there are limitations to substitution for the firm's products on both the demand and supply side.

When substitutability is limited, a dominant firm can make decisions independently of its competitors, customers and final consumers, as set out in the European Commission's Guidelines.[18] For example, in its 2004 Microsoft case, the European Commission assessed each of these dimensions, noting that the emergence of competitors did not affect Microsoft's profitability, pricing or business model. Further, the

Commission noted that Microsoft's direct customers had few alternative suppliers, and that final consumers would face significant switching costs [see, for example, OECD (2006, pp. 22-23[38])].

The calculation of elasticities is a direct, quantitative method of assessing substitutability (see, for example,

Werden (1998[39])). In particular, the elasticity of demand measures the responsiveness of consumers to a change in the firm's offering. This could include price, but in many digital markets, alternative dimensions of competition will be more relevant. These alternatives may be more

difficult to quantify, but the concept of elasticity should in any event guide any assessment of dominance.

Where a complete econometric estimation of demand elasticity is not possible, the use of event studies may provide a practical alternative. These studies can look at the impact of a change on the market, for example modifications in a search algorithm, data collection policy, or some aspect of service quality (as noted in OECD (2018[32]), care should be taken to select on dimensions that are considered by consumers, rather than making a judgment call about what consumers should care about). The change in demand in response to these changes should be compared to expectations during that period (for example using a firm's internal forecasts), to ensure that the event study does not erroneously measure the impact of other events or changes.

Entry barriers and potential competition

A dominant position can be the result of entry barriers in a market, and thus an analysis of entry barriers can provide an indirect indication of dominance. In particular, a dominant firm may be insulated from competitive pressure because entry barriers prevent rivals from entering and undercutting it. While this logic is straightforward, it can be challenging to identify exactly what constitutes an entry barrier in a market. Further, it is not on its own determinative of a dominant position, since even in markets with entry barriers, a sufficiently strong actual or potential competitor could impose a constraint on the firm in question.

Exactly what constitutes an entry barrier is a matter of debate among economists. Some focus on factors that prevent prices from reaching a competitive level (Bain, 1956[40]), although there is debate about what these factors are (e.g. economies of scale, high fixed costs), and whether they have the same effect in all markets (Carlton, 2004[41]). For example, fixed costs may not necessarily impair, or even slow down, new entry into a market in all circumstances. They may

affect the optimal number of firms in a market, but they do not necessarily give incumbents market power.

Others focus on costs that would be incurred by entrants but not incumbents (Stigler, 1968[42]; McAfee, Mialon and Williams, 2004[43]). Examples of these types of barriers include new regulations that have been imposed on a market, but for which existing market participants are exempt (so-called "grandfather clauses"), or the infrastructure and client base provided by governments to former state-owned monopolies in sectors that are opened to competition. However, it is not clear that

Finally, some theories focus on sunk costs (that is, costs that cannot be recovered if a firm exits a market, which can dissuade entry), which may result in market power in the presence of economies of scale (Schmalensee, 2004[44]).

For competition enforcement purposes, the debate about what kind of cost should be labelled a barrier to entry may not be informative, and could give rise to unproductive disputes in legal proceedings. Instead, competition authorities may seek to ground their assessment of market power about the likelihood and timing of potential entry in a market – thus including entry barriers in the context of the broader analysis of supply substitution. For example, Carlton proposes focusing on "how the industry will behave over the next several years" (2004, p. 6[41]). This approach reflects the need to take a dynamic perspective to a market, while maintaining the focus on a period relevant for competition law rather than the conceptual economic long run (in which all costs are variable).

Regardless of the precise label applied, there are several particular factors in digital markets that affect entry in digital markets. Digital markets often exhibit significant economies of scale, with high fixed costs and low or zero variable costs. As a result, prospective entrants to a market will

incur higher costs than incumbents, at least until they are able to attract consumers. While these characteristics may not be permanent in the long term given that fixed costs will need to be incurred again due to obsolescence, they could slow down entry. For example, when consumers in a market exhibit a high degree of brand loyalty and there are high fixed costs, entry could be impeded (McAfee, Mialon and Williams, 2004, p. 464[43]).

Another common feature of digital markets are network effects. The strength of these effects, and thus the extent to which they prevent entry, will depend on the market in question. When consumers are not likely to switch providers, for example, due to high switching costs, limited data portability, habit, the need to learn a new system, or bundling and tying, network effects can be a significant barrier to entry (Candeub,
2014[45]; Bamberger and Lobel, 2017[46]). Limits to multi-homing may also limit consumers' willingness to try new products. This can give incumbents a significant source of advantage.

A related potential factor is data collection. Incumbent firms may amass large datasets, and use those datasets to enter other markets with a significant advantage. Indeed, recent amendments to the German Competition Act have added access to data as a factor to consider in assessing a firm's position.[19] However, consideration should be given in each individual case as to whether data constitutes plays a significant role in entry. In particular, data acquisition may have involved significant costs for the incumbent, and the same or alternative datasets may be available to entrants for purchase (see further discussion about the indispensability of data below).

Access to financing for potential entrants is not generally considered a barrier to entry, as any firm would require funding to enter a market. However, Khan (2017, p. 779[25]) asks whether the unique investor dynamics involving Amazon, and certain other digital firms, could constitute a barrier to entry. This is due to the observation that the investors of certain firms do not seem to expect profitability, even beyond the short-term, from certain digital firms. Other potential entrants may

not benefit from the same investor mindset. This could suggest favourable entry conditions for first movers, although other factors unrelated to entry barriers could also be at play.

Entry barriers can provide some indications of whether a firm faces the threat of competition in a market, depending on the strength of both the barrier and the potential entrant. This reflects the insight that even if a firm holds a large market share, the threat of potential competition may limit their ability to exercise market power beyond the short term, and thus engage in abuses of dominance (although it may also increase incentives to engage in abusive conduct before entry occurs to prevent entry or raise rivals' costs). This potential entry may come from a small, disruptive start-up firm, although this threat may have a limited effect on disciplining the exercise of market power in the short-run. The existence of established potential rivals may, however, be a more effective constraint when there are significant barriers to expansion. If the rivals operate in similar markets, or have the assets needed to participate in the market in question, a firm's dominance may be undermined. Authorities can consult industry and investment analyst reports, for example, to understand the susceptibility of a market to new competition, and the field of potential rivals.

Measures of profitability

If a firm exhibits relatively high profit levels compared to others in the market, it could be a potential indicator of market power, but further evidence will be needed to put this in context (e.g. whether they reflect a recovery of R&D investments not included in a given measurement of cost). Whether these relatively high profits have been enjoyed consistently in recent years could be helpful in understanding competitive conditions. In particular, analyses of the evolution of profits over time can demonstrate whether a market has been contestable in the past (e.g. dominant firms have been overtaken). Stable profits over time could be a signal of persistent market power, but

the time horizon used for this assessment should reflect the characteristics of an industry (i.e. its susceptibility to rapid shifts).

Additional context is needed to understand whether, during this time a firm has introduced significant new features or innovations in order to maintain its position in the market given competitive pressures (although such changes may have registered in changes to profits if they required substantial investments).

Care should also be taken in ensuring that economic, rather than accounting, profit measures are used. The adapted Lerner index from Tremblay (2017[47]), which measures market power, could be a good alternative. In particular, it helps avoid data limitations and problems with accounting definitions of business performance. This adjusted Lerner index is calculated as total platform profit plus fixed costs of the platform, all divided by the total revenue of the platform.

Market shares

Market shares are not on their own a reliable indicator of market power or dominance, since they fail to capture the dynamic competitive pressures that firms face from substitution, particularly when products are differentiated. For instance, some firms with large market shares may nonetheless have limited market power due to the imminent entry of a competitor. Further, some digital markets may exhibit "competition for the market" dynamics – that is, firms will vigorously compete to become the primary provider of a given product or service for a limited time. This may particularly be the case where consumers are not likely to multi-home (use multiple brands of the same type of product at once), there are significant network effects, and there is relatively little differentiation among competing products (Eisenmann, Parker and Van Alstyne, 2006[48]). However, others have questioned whether competition for the market can reliably be considered

an effective restraint on anticompetitive conduct in most instances (Digital Competition Expert Panel, 2019, p. 4[49]; OECD, 2019[50]).

Nonetheless, market shares are often considered as part of an assessment of dominance. For example, it can help provide a useful starting point for analysis if a firm has large market shares and its remaining competitors are all small, suggesting that an authority should also consider whether there are constraints outside of the market. Several authorities also have established market-share based criteria, to provide market participants with clarity about situations in which firms will not be considered to be dominant, for example:

- Brazil: Legislation states: "A dominance position is assumed when a company or group of companies is able to unilaterally or jointly change market conditions or when it controls 20% (twenty percent) or more of the relevant market, provided that such percentage may be modified by [the Brazilian Competition Authority CADE] for specific sectors of the economy"[21]
- European Commission: The Commission has indicated that a firm with a market share of less than 40% is unlikely to be dominant[22]
- Japan: there is no minimum threshold for monopolisation cases, but the Japan Fair Trade Commission has indicated it will prioritise cases involving suppliers with at least a 50% market share.[23]
- UK: Guidance states it is "unlikely that an undertaking will be individually dominant if its share of the relevant market is below 40 per cent, although dominance could be established below that figure if other relevant factors (such as the weak position of competitors in that market and high entry barriers)." [24]

- US: The agencies suggest that dominant firms generally have a market share of at least 50%, although some courts have required a higher market share.[25]

Beyond questions about the degree to which they are informative about competitive pressures in a market, market shares in digital markets can also require judgment in terms of the right measure to use. Multisidedness could require the consideration of multiple measures. The market share for services provided at the price of zero, for example, could incorporate various different measures, such as share of users, or share of interactions or transactions – some of which may be more meaningful for understanding the paying sides of the market than others.

Potential sources of evidence for establishing dominance in digital markets

Some key potential sources of evidence for establishing dominance in digital markets are summarised in Table 1 below.

Table 1. Potential sources of evidence for establishing dominance in digital markets

Issue to be evaluated	Sources of evidence
Market definition: Is the market a platform? If so, should one multisided market or two interlinked markets be defined?	□ Information regarding the platform's business model (internal firm documents, analyst reports, information requests from market participants) □ Information regarding externalities (interviews/information requests with large customers on paying side, such as advertisers, consumer surveys, information from the firm regarding functionality)

	□ Information regarding pricing strategies (evidence of cross-subsidising between different business units, internal documents on pricing)
Market definition: incorporating non-price dimensions of competition	□ Information regarding consumer preferences (surveys, analyst reports, interviews) □ Information regarding the firm and its competitors' views of the relevant dimensions of competition (internal documents, interviews) □ Information regarding innovation (R&D spending, past patterns of product changes or new products, internal firm documents, analyst reports)
Demand-substitutability	□ Information regarding substitutes for consumers and limitations to substitution, for example due to switching costs (surveys, analyst reports, interviews, internal firm strategy documents) □ Sales data to calculate elasticity of demand, estimate diversion ratios, and conduct event studies
Entry barriers and potential competition	□ Interviews from recent, potential or failed entrants (or press commentary) regarding costs, regulatory burden, network effects, technological factors and demand-side characteristics (e.g. behavioural biases such as inertia) that advantage incumbents □ Information requests from the firm to validate potential entry barriers (e.g. existence of regulatory exemptions for incumbents,

	and internal documents such as business cases for investments, email correspondence, research reports) □ Information regarding the role of data and network effects in the market (information requests, analyst reports, internal documents)
Profitability	□ Data from the firms, including revenue and cost data to calculate the Lerner index □ Commentary by investment analysts, internal documents or documents from financial advisors
Market shares	□ Data from firms and competitors □ Data from third-party data providers □ Information regarding non-price competition (see above)

Key considerations for establishing dominance

 The concept of dominance is generally rooted in market power – namely the ability to act unilaterally, without being constrained from departing from competitive outcomes by consumer or supplier decision-making. This is because the effects of certain conduct will depend on whether the firm has market power. Strategies that may be procompetitive in the absence of market power could have exclusionary effects when employed by firms with market power. To identify whether a firm is dominant, several indicators can be used:

- Substitutability is a key direct indicator of market power – if consumers lack alternatives, a dominant firm faces fewer constraints on its decision-making. Substitutability can be estimated through the calculation of elasticities, although less data-intensive alternatives can be informative (e.g. event studies and diversion ratios).
- While there is significant debate about what constitutes an entry barriers, authorities should focus on what will likely affect market structure within a few years. In digital markets, network effects and data can insulate dominant firms from competitive pressure. Care should be taken before determining that a given market characteristic constitutes an entry barrier, however.
- Profitability analysis can also be a helpful indicator, particularly when profit levels are stable and comparators can be found that suggest a market power premium in the market in question.

- Market shares are commonly used to establish thresholds below which no competition concerns are likely, however they may be less meaningful in digital markets. Further, a thorough market definition exercise is needed for market shares to avoid giving misleading results. For example, erroneous market definitions (such as those based on product characteristics rather than substitutability) will have significant consequences for the assessment of dominance.

Types of abuse of dominance cases in digital markets

This section sets out the main types of conduct in digital markets that could constitute an abuse of dominance, based on past competition authority cases and the economic literature. These categories can be helpful in developing theories of harm and identifying the key issues to assess, although they may not be exhaustive. The legislation in many jurisdictions does not prevent authorities from pursuing other types of conduct that could be considered an abuse of dominance (see, for example, Akman (2017, p. 306[51])). In its guidelines on abuse of dominance, the then UK Office of Fair Trading (OFT) (2004, p. 18[52]) indicated:

> In general, the OFT considers that the likely effect of a dominant undertaking's conduct on customers and on the process of competition is more important to the determination of an abuse than the specific form of the conduct in question. Conduct may be abusive when, through the effects of conduct on the competitive process, it adversely affects consumers directly (for example, through the prices charged) or indirectly (for example, conduct which reduces the intensity of existing competition or potential competition).

An openness to considering new types of misconduct may be particularly important in digital markets, given the new business models and strategies that have been developed. In particular, as noted below, some new types of abuse of dominance are being identified that are specifically tailored to digital markets.

Economic theory and empirical evidence suggests that the precise effects of a given practice will vary according to the circumstances of each case. While economics can help determine the key

questions for assessing the effects of a practice, it cannot provide a blanket assumption that, for example, tying by a dominant firm will always harm competition and consumers (when in fact it can provide convenience and functionality that benefits consumers). Common features of digital markets, such as multi-sidedness, network effects and low variable costs, can add further complications, and so we cannot rely on simple predictions of the impacts of certain types of conduct.

Thus, from an economic perspective, abuse of dominance cases should not follow a mechanical approach – for example, an infringement should not be automatically found when a firm with a given market above a subjective threshold share engages in a predefined list of conduct, such as tying or bundling. Such an approach risks condemning conduct that could be beneficial for consumers, and potentially missing new forms of misconduct. Thus, a clear theory of harm supported by economic analysis and the specific facts of a case will be essential. This section will explore the analysis needed to evaluate various theories of harm that could constitute an abuse of dominance. However, whether an authority must demonstrate effects on consumers, as opposed to on competitors and competition more generally (used as a proxy for consumer harm), will depend on the jurisdiction in question, as described above.

Notwithstanding these observations, the theories of harm described below can provide a helpful template for the analysis of potential abuses. The types of abuse of dominance explored in this section, along with the situations in which they may apply, are summarised in Table 2 below.[26]

According to a recent survey by the ICN (2020[1]), the most commonly investigated conduct in digital markets related to a refusal to deal (12 out of 30 jurisdictions' investigations), followed by tying (11 out of 30) and exclusive dealing (5 out of 30).

The majority of the abuses described here can be categorised as exclusionary – that is, their effect is to push competitors out of the market in question and prevent new entry. However, an additional category of abuse in many jurisdictions relates to exploitation of a dominant position to charge excessive prices (or deteriorate quality to an excessive degree). These types of cases are receiving increased attention in digital markets, although they face several conceptual challenges, as described below.

Table 2. Linking abuse of dominance theories of harm to observed conduct in markets

Observed conduct or market outcome	Potential abuse of dominance theory of harm
Competitors of a firm cannot get access to an important input or technology needed to compete	If: • It can be proven that the input or technology is essential to compete • A dominant firm owns or otherwise controls all of the input or technology, and • It is feasible for the input to be shared (demonstrated, for example, by past agreements to supply the input) Then: • A refusal to deal theory of harm may apply • Or, if the dominant firm has obtained the input through an exclusive supply agreement, an exclusive dealing theory of harm may apply

A dominant, vertically integrated firm is charging downstream rivals higher prices, or offering less advantageous terms or quality	If: • The upstream input is important to compete • The conduct results in higher prices or worse quality for consumers Then: • A margin squeeze theory of harm based on discrimination may apply
Consumers are not willing or able to switch to away from a dominant firm's products	If: • Consumers sign exclusive purchase contracts with a dominant firm, or are otherwise prevented from switching suppliers, or • The dominant firm offers loyalty rebates (or payments) to consumers based on the amount of inputs they purchase, or the proportion of their inputs coming from a dominant firm And: • There is no justification for the conduct other than excluding competitors from the market or denying them scale Then: • An exclusive dealing or loyalty rebate theory of harm may apply
Consumers are compelled or incentivised to purchase different products together	If: □ A firm with market power over the supply of a product conditions the purchase of that product on the

	purchase of another product (either through contractual or technical means) And:
Observed conduct or market outcome	Potential abuse of dominance theory of harm
	• There is no justification for the conduct other than excluding competitors from the market or denying them scale Then: • A bundling or tying theory of harm may apply
A firm is charging very low prices	An abuse will occur only in exceptional circumstances, namely if: • A dominant firm is sacrificing profits in order to force competitors to exit the market, without other business justifications and with the likelihood that losses will be recouped through higher prices after the exit of competitors, • A dominant firm is setting prices at a level that will generate profitability solely due to denying rivals scale or network effects, or • A vertically integrated firm is charging low prices downstream and high prices upstream to foreclose competitors Then: • A predatory pricing theory of harm may apply

A firm is charging very high prices or is deteriorating quality	An abuse will occur only in exceptional circumstances, namely if: • A dominant firm is charging excessive prices or imposing unfair conditions on the sale of a product And: • The jurisdiction in question enforces excessive pricing or unfair conditions as an abuse of dominance Then: • An exploitative abuse theory of harm may apply

Refusal to deal

Refusals to deal encompass a wide range of potential competition concerns identified in digital markets. In essence, these concerns focus on access to an important input, technology or distribution network (referred to below collectively as "inputs" for convenience), without which it would not be possible to compete in a market. These are sometimes referred to as "essential facilities" (Orbach and Campbell Rebling, 2012[53]). A dominant firm that owns (or otherwise has exclusive access to) such an input can therefore, according to these theories of harm, foreclose competition by denying rivals access to this resource.

Consider the fictional example of a mineral that is only available from a single mine, and a market for processor chips that have no substitute and for which the mineral is a necessary input. If one of the firms producing processors acquires the mine and refuses to supply its rivals, it could constitute input foreclosure. Cases when firms are prevented from selling to consumers, for example by being refused access to an essential distribution network, are called customer foreclosure (which can also result from exclusivity agreements, described in a later section).

A refusal to deal can be classified as either (OECD, 2007, p. 26[54]):

- an unconditional refusal, in other words a blanket refusal to supply in any situation;
- a conditional refusal, which is a refusal to supply unless the purchaser agrees to certain terms, such as exclusivity; or
- a constructive refusal, in which case the supplier agrees to a deal, but only under terms that make it difficult for the purchaser to compete. For example, in digital markets, this could include degrading the conditions for access to the input or failing to provide sufficient information to make use of the digital input in question (Colomo, 2019, p. 8[55]). This theory will be addressed in the section on margin squeeze below.

While the logic of the stylised example described above may seem straightforward, refusal to deal theories of harm are controversial. One traditional critique points to the single monopoly profit theorem. This theorem suggests that if a firm is already a monopolist upstream, it will not be profitable to foreclose downstream firms with which it competes. In other words, if the firm refuses to deal with downstream competitors, it is for efficiency or business reasons unrelated to exclusion (OECD, 2007, p. 35[54]). Thus, any competition enforcement measures that obligate the monopolist to supply the input are not likely to lower prices or provide any consumer benefit (further discussed, for example, in Orbach and Rebling (2012[53])). This theorem may not apply, however, in some digital markets due to their underlying characteristics (namely when the firm is not a monopolist upstream but is only dominant downstream, or if the downstream firms compete with the monopolist in multiple markets – see OECD (2007, p. 35[54])).

Even when a refusal to deal can be shown to foreclose competition, some have pointed out the risks of overbroad enforcement activity to remedy the situation (as discussed in OECD (2007[54])). In particular, the obligation to share an important input with one's rivals may undermine the

incentives of firms to develop such inputs. In other words, firms may be discouraged from developing innovations, or making other investments that may involve risks and which are beneficial for consumers (and the economy overall) if they will not be able to have an exclusive right to their results (Geradin, 2010[56]).

In addition, remedies that require firms to share these inputs can undermine the incentives of any potential rivals seeking to develop substitutes to these inputs, since they could also be subject to disadvantageous terms, again worsening consumer welfare (OECD, 2007, p. 27[54]). This complicates the analysis of refusals to deal significantly, as the effect of a given enforcement action may extend well beyond simply obtaining access to an input for a given firm, for example. Recognising these risks, courts in the US have, for example, been circumspect about mandating competitor access to essential facilities, although a duty of access has been confirmed in several EU cases (Fox, 2014[7]).

This analysis can be complicated by a range of methodological issues, ranging from what margins to use, to how to take into account integration efficiencies (see, for example, Aburn (2012[57])). These issues are compounded in digital markets, where marginal costs are low or zero, in which case it may not be appropriate to focus only on "as efficient" competitors (discussed further in the section on predatory pricing below). An alternative approach is to ask whether the conduct would make economic sense for reasons unrelated to the exclusion of downstream competitors. This test recognises that even less efficient competitors can provide competitive discipline for firms, although the precise mechanism to apply this approach has not yet been developed (OECD, 2018, pp. 106-107[34]).

Refusals to deal associated with technology involve a unique set of issues, for example when a firm refuses to license a patent to its competitors. Many digital markets rely on certain technology standards to encourage innovation and interoperability. So when a firm holds a patent that is

necessary for the implementation of that standard, a so-called standard essential patent (which are generally established on the condition they are licensed on a fair, reasonable and non-discriminatory basis), it could be in a position to foreclose competition. In digital sectors, this may take the form of firms issuing injunctions for rivals to cease using a given piece of technology. It is rare for these types of issues to be addressed in the context of an abuse of dominance proceeding, rather than through standard-setting organisations or through contract litigation, with the exception of a few cases in the EU (OECD, 2014[58]) and Korea[27].

Indispensability

Another conceptual challenge associated with refusal to deal cases is the need to determine the importance of the input in question. For example, in the EU, refusal to deal cases are generally evaluated with respect to whether an input is "objectively necessary to compete[28]", or indispensable a condition that seeks to filter out refusals to supply that are not likely to affect competition (Geradin, 2010, pp. 8-9[56]). If there are effective substitutes for the input, or it can be feasibly duplicated, then it is not possible to foreclose competition by refusing to deal with competitors.

In digital markets, it may not be straightforward to determine which inputs are indeed indispensable, and whether they could be replicated by competitors as a response to any refusals to deal. Data are commonly identified as an important input in digital markets – they can be used to harness network effects, target consumers (including for digital advertising), develop personalised pricing, improve product quality, launch new products, and implement a range of business strategies. Some have gone as far as to say that the datasets of certain dominant players are prerequisites for being able to compete in certain markets (OECD,

2016[59]). Other studies have suggested that certain digital platforms could "position themselves as a mandatory bottleneck between partners and customers", raising the idea that a digital service could itself constitute an indispensable input (Stigler Committee on Digital Platforms, 2019, p. 30[4]). An example of a refusal to supply case involving a key database is provided in Box 2 below.

However, it is not clear that a refusal to provide data to one's competitors would constitute a refusal to deal in the context of competition law (OECD, 2020[60]). Datasets are a collection of individual data points, and so it is unclear at what point a dataset would become indispensable, and whether the insights or value to be obtained from it could be obtained from other sources (Katz, 2019[61]). In some cases, data may be purchased from third party data aggregators, and different datasets may be used to generate the same insights. For example, could the data showing search engine patterns among a certain demographic generate similar insights as the data from an online shopping platform or social network? Further, much of the value of data can come from how it is processed, in terms of organisation and analysis, which can be costly (Katz, 2019[61]). Thus, it is not clear whether access to raw data would be helpful for competitors, or whether access remedies would create the investment disincentives described above.

In addition, data can be used to improve quality, or to provide added features, without constituting an input that is indispensable for firms to compete. As Sivinski et al (2017, p. 214[62]) put it, it is also important to distinguish between data that is "nice to have" from data that is "must have". They suggest that the presence of at least some competitors in a market demonstrates that data is more likely to be the former rather than the latter in that marker.

Box 2. The French Autorité de la concurrence's case involving Cegedim

The French Autorité de la concurrence found that Cegedim SA had abused its dominant position in the market for medical information databases.[29] The medical databases were used

by pharmaceutical laboratories for the management of patient appointments. Cegedim provided both the databases

"OneKey"" and its own customer relation management software (CRM). Cegedim refused to license its database to any laboratories using a specific competing CRM called "NetReps," produced by Euris. Cegedim did, however, sell its database to laboratories using other competing CRM software. In other words, the conduct focused only on laboratories using NetReps by Euris. Cegedim argued its behaviour towards Euris was justified as it was pursuing separate legal action against Euris.

The Autorité considered whether "OneKey" was an essential facility. It found that access to the database was not indispensable for Euris and other producers of CRM software. Specifically, the Autorité recognised that competitors could reproduce the database from a technical perspective (and that rival software companies and laboratories did have their own databases). Even though it was not possible to fully reproduce an equivalent database given Cegedim's recognised reference value and its use among laboratories, the Autorité found that the existence of alternatives was sufficient to prove that

"OneKey" was not an essential facility.

However, the Autorité did find Cegedim infringed a particular aspect of abuse of dominance law in France (and the EU, under specific circumstances) related to discrimination. In particular, it found that the effects of Cegedim's behaviour on Euris, in limiting its access and eventually pushing it out of the market, constituted an abuse of dominance. The Autorité de la concurrence fined Cegedim €5 767 000 and ordered the company to the discrimination. Cegedim appealed to the Paris Court of Appeal and the Commercial Chamber of the Court of Cassation. The courts confirmed the decision of the Autorité.

Source: Décision n° 14-D-06 du 8 juillet 2014 : https://www.autoritedelaconcurrence.fr/sites/default/files/commitments//14d06.pdf

Some platform business models involve vertical integration, and could therefore be subject to complaints about refusals to deal. Concerns arise in particular with respect to transaction platforms. If the platform operator introduces their own products to be sold on the platform, they could conceivably implement unconditional or constructive refusal to deal strategies to foreclose access to the platform by competitors. Box 3 below provides an example of a refusal to deal regarding access to an important sales platform in the real estate market.

Box 3. The Canadian Competition Bureau's case involving the Toronto Real Estate Board

In May 2011, the Canadian Bureau brought an abuse of dominance case against the Toronto Real

Estate Board ("TREB"). The Bureau alleged that TREB had abused its dominant position in the market for residential real estate brokerage services in the Greater Toronto Area, under section 79 of the Competition Act. The abuse related to restrictions on the access, use and online disclosure of data from the Multiple Listing Service Database ("MLS"), which was controlled by TREB and accessible only to its members. It was a database containing current property listings and historical information about the purchase and sale of residential real estate. The Bureau explained that most local real estate transactions make use of the MLS database and explained it was "an essential tool for agents to help customers buy and sell homes".[30] Much of this information was not available on other public sources and in 2016, the Tribunal noted that there was no 'readily available substitute for the full range of information and services'' [paragraph 144] and that any other similar source was seen as a 'complement' not a 'substitute'.[31]

TREB had issued a set of rules restricting its members from broadly disclosing historical real estate sales data online. There was a difference in how TREB allowed its members to disclose data online and offline. The Bureau alleged this prevented innovative online services. The Bureau alleged that these restrictions were an anti-competitive act that had the effect of lessening or preventing competition substantially. In April 2016, the Canadian Competition Tribunal ("Tribunal") agreed that TREB's restrictions prevented greater access to new and innovative real estate services, more in-depth listing information, and innovative online analytical tools. The tribunal noted that this was not an essential facilities case but instead was about how the TREB was making the MLS accessible to its members. The Tribunal ordered TREB to remove its restrictions.

TREB's appeal to the Federal Court of Appeal was dismissed. It then filed an application for leave to appeal to the Supreme Court of Canada, which was dismissed on 23 August 2018.

Sources: Adapted from Consumer Data Rights and Competition – note by Canada, 12 June 2020, page 3, https://one.oecd.org/document/DAF/COMP/WD(2020)31/en/pdf

Competition Bureau Canada, Backgrounder: Abuse of dominance by the Toronto Real Estate Board, https://www.canada.ca/en/competition-bureau/news/2018/08/backgrounder-abuse-of-dominance-by-the-toronto-real-estate-board.html

Competition Tribunal, decision summary, https://www.ct-tc.gc.ca/en/cases/decision-summaries/documents/CT-2011003%20Summary.pdf?zoom_highlight=toronto+real+estate+board#search=%22toronto real estate board%22

Tribunal's decision: https://decisions.ct-tc.gc.ca/ct-tc/cdo/en/item/462979/index.do?q=toronto+real+estate+board+reasons

However, several of the cases to date involving platforms and their downstream businesses, including socalled issues regarding "self-preferencing", may not fit within a refusal to deal framework, and may be better addressed either through the margin squeeze or bundling and tying theories described further below (Iacobucci and Ducci, 2019[5]; Bostoen, 2018[63]). For example, with respect to the EU's Google Shopping case described below, Akman (2017, pp. 308-309[51]) considers whether a refusal to deal theory of harm would apply, and opines that several key elements required under EU case law are missing. In particular, it is not clear whether the Google search engine was indispensable for comparison shopping services to be able to reach consumers. Further, she argues that a refusal to deal case would need to show clearer consumer effects, namely that the conduct limited consumer options and prevented them from offering better (rather than identical) services (Akman, 2017, p. 309[51]).

Feasibility

Refusal to deal cases can also be filtered based on whether the "deal" in question would be feasible. In other words, it must be technically and operationally possible for the firm to provide access to the input in question. A refusal to deal cannot be established if the asset or access to it cannot be shared, so it may be hard to establish access remedies regarding, for example, the visual placement of digital products when offered to consumers (e.g. one default, or one top spot in a search result ranking, as discussed in Lao (2013[64])).

The most straightforward way to establish this is to determine whether the firm already provides the inputs to some customers (Colomo, 2019, p. 7[55]). This would suggest that it is possible to sell

access to the input, but the firm is making a specific decision not to supply firms that, for example, are its rivals in a downstream market. However, there may be other feasibility justifications for why the input is provided to some customers and not others. For example, providing the input may require certain investments, or may expose certain business secrets, both of which are objective justifications for a refusal to deal.

A second situation in which feasibility has been established is when a firm has been dealing with a customer, but then stops (see, for instance, the US FTC guidelines on refusals to deal[32]). This could be the case, for example, when the firm decides to enter a downstream market and thus compete directly with its former customer. The feasibility-related business justifications for ceasing a supply agreement may be fewer, but should still be considered. For example, there may be cases in which a firm has developed a new downstream product and has made investments in its upstream operations to facilitate interoperability and integration between the upstream and downstream. This could mean that continuing to supply the input to other downstream customers could incur substantial costs or create significant inefficiencies.

Thus, even where the feasibility of providing input access has been determined, caution is needed before casting judgment on whether an intervention mandating access is proportionate, and whether it would benefit consumers.

Potential sources of evidence for refusal to deal cases

Some key potential sources of evidence for assessing refusal to deal theories of harm are summarised in Table 3 below.

Table 3. Potential sources of evidence for refusal to deal cases

Issue to be evaluated	Sources of evidence
Indispensability of the asset	• Information regarding the production or development process for the product or service (interviews, information requests from dominant firm and competitors) • Information regarding potential alternatives (interviews and information requests from dominant firm, competitors, potential rivals in related markets)
Feasibility of sharing the asset	• Information regarding past supply agreements for this or similar assets • Internal documents, information request regarding available technical assessments regarding sharing feasibility
Effects on consumers	• Information regarding business models and product or service quality of potential rivals • Identification of efficiencies from vertical integration (event studies regarding costs and prices before/after integration, contemporaneous internal documents)

Remedies

Even when a clear case of foreclosure due to a refusal to deal can be established, authorities face the challenge of crafting a suitable remedy. Potential solutions range from heavily interventionist, such as structural separation (i.e. requiring the sale of upstream or downstream operations), to

more moderate, such as operational separation of upstream and downstream operations and the application of access conditions for inputs. When the refusal to deal is conditional, the remedy can simply consist of removing the conditions. However, when the refusal is unconditional, some have called for caution (or even avoiding these cases – see Shapiro (2005[65])). Ill-conceived access remedies can benefit competitors without benefiting consumers, or even impose conditions that worsen long-term consumer welfare and dynamic competition in the market.

Caution before taking on unconditional refusal to deal cases is warranted because of the nature of the remedy. A remedy setting the terms for a firm to begin supplying its rivals will require competition authorities to tackle many complex questions: at what price should access be given? According to which terms? In what volumes? For how long? How can disputes be resolved? To avoid some of the burden associated with these types of remedies, the European Commission required the appointment of independent trustees to monitor compliance in its 2004 Microsoft case.[33] Alternatively, auction mechanisms may be useful to ensure equal access to an input or distribution network held by a dominant firm. However, in general, access remedies are bound to be particularly burdensome, resource-intensive to develop and monitor, and involve a high risk of error. They may risk putting the competition authority in the role of a sector regulator or create new sector regulations In particular, a careful balancing exercise will be needed in order to ensure that the remedy does not give rise to the investment disincentives described above.

Remedies to address refusals to license technology will also require a careful balancing between stimulating competition (particularly in the short-term) and protecting long-term investment incentives. In particular, mandatory licensing remedies could undermine the policy objectives of intellectual property protection frameworks (including creating disincentives to register patents), and are thus only considered in exceptional situations (OECD, 2019[66]).

Competition authorities will therefore need to make a strategic assessment of whether an abuse of dominance case, and associated access remedy, is the optimal approach to concerns regarding a firm having a monopoly over an important input. Reasonable conditions for access may not be clear, for example when there are no other comparable supply agreements in place in the market, or if the monopolist has not dealt with its downstream competitors in the past. In these cases, competition authorities may consider whether advocating for sector regulation is a better approach than enforcement action (whether in terms of providing additional powers to existing regulators or advocating for the establishment of new regulators). Competition principles could play an important role in the mandate and approach of said regulation, and in fact would be a valuable discipline to ensure that access remedies are restricted to cases justified by economic harms (e.g. non-contestable monopolies) and designed in order to promote competition.

Key considerations for refusal to deal

- Refusals to deal may generate consumer harm in certain cases, in particular, when the asset in question is indispensable for competition, and the firm in question has an incentive to foreclose competition (e.g. when the conduct affects a competitor that the firm faces in multiple markets).
- Competition authorities generally apply several filters to a refusal to deal before deeming it a potential infringement, including clear evidence that there are no substitutes for the asset in question, and an established pattern of dealing suggesting that it would be feasible to share the asset in question.
- Even with these filters, refusal to deal cases may not be the optimal approach. In practice, competition enforcement remedies to address refusals to deal can be complex, difficult to define, and risky in terms of potential threats to innovation incentives. In

some cases, sector regulation that is grounded in competition principles may be easier to administer than a complex access remedy imposed in an abuse of dominance case.

Predatory pricing

Predatory pricing refers to a foreclosure strategy by a dominant firm in which it sacrifices profits in the short term in order to drive its competitors from the market, at which point it will seek to recoup its losses with higher prices (OECD, 2004[67]). While these theories are intuitively appealing, there are generally several analytical hurdles that must be cleared before establishing that a giving pricing strategy is predatory (as opposed to simply aggressive competition). One form of this conduct, called below-cost predatory pricing, focuses on pricing below some measure of cost (often average variable cost), meaning that rivals as efficient as the dominant firm would be unable to compete (OECD, 2004[67]). However, in cases of above-cost predatory pricing, a broader perspective may be needed to determine whether the conduct has a business justification beyond inducing the exit of rivals. Potential justifications, such as the need to clear out expiring inventory, will need to be considered. In some jurisdictions such as the US, low but competitive prices are differentiated from predatory ones by determining whether the strategy will enable the

firm to recoup its losses through higher prices into the future, that is after the exit of competitors (OECD, 2018, p. 17[34]).

Predatory pricing cases in digital markets involve several conceptual challenges. For instance, determining the right measure of cost will not be straightforward given that the marginal costs in many digital markets are often very low. Some other costs, or an adjustment for the scale of different firms, may be need to be considered, although precise guidance on this topic is limited. Further, even when costs are low, the blurring boundaries between different markets may make this analysis challenging. For example, many digital firms may offer products at a price of zero, in which case a mechanical application of price-cost tests would generate false-positives in terms of predatory pricing. A price of zero may be reflective of a range of business strategies, such as a "freemium" strategy in which a firm offers both a zero price version of a product and a paid premium version. Below-cost pricing in these cases may not have a predatory effect.

More challenges arise when dealing with multisided digital platforms. As described above, these platforms often involve cross-subsidisation between different sides of the market. Low or zero prices on one side of a platform can be a strategy for maximising network effects, for example, attracting a user base to increase the platform's value to consumers on another side of the market (where the losses could be recouped). Thus, below-cost pricing on one side of a market will often be a procompetitive strategy (OECD, 2018, p. 23[34]). The analysis will therefore need to consider the overall costs and price levels on all sides of a market. Some have advocated in particular for comparing the overall price level across the platform with overall average variable costs (Behringer and Filistrucchi, 2015[68]). Box 4 provides an example of a case in which these effects were recognised in the context of a multi-sided market predatory pricing case.

Conversely, the characteristics of multi-sided markets can also result in predatory pricing when they seek to deny rivals sufficient scale to operate. Thus, the analysis of costs and prices alone is

unlikely to help establish predatory pricing in a multisided market (OECD, 2018, pp. 108-112[34]). Such an analysis may be further hampered by the importance of scale and network effects in a market – effective competitive pressure may be generated by new rivals that have not yet generated a critical mass, and thus are less efficient than the dominant firms (as recognised, for example, by the European Commission in its guidance on predatory pricing[34]). In other words, predatory pricing could generate harm in digital markets even if it harms firms that are less efficient than the dominant firm, making it a challenge to determine what level of efficiency should be used for any price-cost test (Stigler Committee on Digital Platforms, 2019, p. 96[4]).

As an alternative, predatory pricing analysis could ask whether the below cost pricing strategy is profitable because it builds up a user base or because it weakens rivals (using the approach set out in OECD (2018, p. 23[34])). If only the latter is true, it suggests that predatory pricing appears to have occurred without an offsetting efficiency justification. Khan identified one potential example, with respect to an online transaction platform. The platform used a pricing algorithm to undercut a downstream product market rival and then purchase the weakened rival, a strategy which Khan (2017[25]) suggested was predatory in nature. However, the practical methodology for making these assessments in enforcement cases is still being developed.

Box 4. The Bottin Cartographes/Google France case

In July 2009, Bottin Cartographes filed a complaint against Google France, alleging that the latter was abusing its dominant position in the market for digital mapping APIs (application programming interfaces) through predatory prices.

The plaintiff theory was that Google France was offering these services on a free basis to users in order to remove its competitors from the market, after which it could increase prices.

In 2012, the Paris Tribunal de Commerce found that Google France had foreclosed the market and ordered it to pay damages of EUR 500 000. This decision was reversed in November 2015 by the Paris Court of Appeal, after it sought an opinion from the French Competition Authority. In the opinion, the Authority noted the potential competition faced by Google in the market, and found based on price-cost tests that there was no evidence of predation (Autorité de la concurrence, 2014[69]). The Authority further noted the complexity of applying these tests in digital markets, recognising that the price of zero offered to some consumers was complemented by a paid, premium service for others (sometimes called the "freemium" business model).

The original Tribunal de Commerce decision was critiqued for applying an analytical framework developed for traditional markets to this case (see, for examples, Concurrences (2013[70]). In particular, the digital mapping API services provided by Google were part of a broader business model based on advertising sales, and were thus a multisided market. As a result, examining the revenues and costs on one side of the market (API services) alone could lead to an erroneous finding of predatory pricing even though a zero price on one side of the market was compensated for by positive prices on another (advertising).

Source: Box excerpted from OECD (2019[3]).

Digital markets also pose challenges for jurisdictions that require proof that the dominant firm is likely to recoup its losses from predatory pricing. Beyond the complexity associated with multi-sidedness, assessing whether recoupment may or has already taken place can be difficult in online markets where prices fluctuate rapidly and frequently (Khan, 2017, p. 763[25]). More

fundamentally, digital markets feature several firms that have acquired large market shares without being profitable for extended periods of time. In these cases, investors appear to have determined that the long-term profit expectations of a firm are such that short and medium-term losses are justified. For example, a firm may seek to build a user base that can then be monetised, for example through the sale of downstream products, or the introduction of premium versions. Thus, some have called for a longer and broader (multi-market) horizon when considering the potential for recoupment, given the business strategies and investment dynamics of many digital firms (Khan, 2017, p. 763[25]).

Key considerations for predatory pricing

- Predatory pricing can be a strategy by a dominant firm to exclude competitors by setting prices below costs long enough to force competitors to exit the market, at which point enhanced market power can be used to raise prices.
- Traditional predatory pricing analysis involves comparing the allegedly predatory price with some measure of costs that would be incurred by a rival as efficient as the dominant firm. However, in digital markets, low marginal costs and multi-sided platform business models mean

that this analysis will not be valid. Further, given the importance of scale and network effects, some have asked whether the dominant firm's costs are the correct benchmark to use for costs.

- As an alternative, alleged predatory pricing in multisided markets could be assessed in terms of whether it is profitable because it builds up a user base, or whether it is only profitable because it denies rivals scale. When an assessment of recoupment is needed,

some have proposed a longer timeline and better incorporation of the long-term perspective taken by investors in technology companies. However, practical guidance on how to follow these approaches is limited, and further empirical research may be needed.

Margin squeeze

Margin squeeze theories of harm also apply to vertically integrated firms with market power either upstream or downstream. In particular, they involve a firm reducing its rivals margins through two mechanisms, described below. These theories have to date mostly focused on network industries, including energy, broadcasting and telecommunications. For example, margin squeeze concerns may arise when a formerly state-owned integrated telecommunications provider may, with liberalisation, face competition from downstream retailers but still control access to an important input (i.e. the network) (OECD, 2009[71]). However, some commentators have proposed applying these theories to digital markets, particularly with respect to digital platform markets. (Bostoen, 2018[63]).

Margin squeeze mechanisms

Cross-subsidisation

One mechanism of margin squeeze can occur when a dominant upstream supplier charges high prices, while its downstream operations charge a low price, meaning that rivals will face both higher input costs and lower prices for their products. Thus, any losses incurred through low costs in the downstream market can be recovered by high costs in the upstream market. This type of conduct can be considered a type of predatory pricing strategy (OECD, 2020, p. 9[72]).

In particular, the "as efficient" competitor test can be applied to this type of margin squeeze (OECD, 2009, p. 89[71]). The test seeks to determine whether the price a firm charges for an essential input is too high for its downstream rivals to operate. This question could be answered by asking whether the firm's downstream operations, if they were independent, would be profitable if they had to pay the same price as competing firms. A major conceptual challenge arises in the application of these tests to markets in which even the dominant player is not profitable, however (Bostoen, 2018, p. 15[63]).

Discrimination

A vertically integrated firm may also employ a discrimination strategy. This involves a dominant supplier charging downstream competitors a higher price than its own downstream operations (alternatively, a dominant downstream distributor offering upstream competitors lower prices than its own upstream operations). This type of conduct can therefore raise rivals' costs, forcing them to raise prices. This relieves competitive pressure on the dominant firm and increases its margins while resulting in higher prices (or worse quality and less innovation) for consumers. Further, discrimination may also come in the form of non-price terms, for example less preferential access or input quality. This type of margin squeeze is considered in the EU, for example, but not the US, although a similar analysis of harms has been considered in the context of vertical mergers (see, for example, Shapiro (2019[73])).

Competition authorities that consider these theories of harm stress that, in general, firms should be permitted to choose their business partners,[35] and that there are legitimate reasons for firms to charge discriminatory prices, for example to fund or recover investments.[36] Thus, competition authorities could focus on cases with the most clear-cut indications of potential harm; namely:

- Cases in which the input in question is indispensable, in which case the margin squeeze could be considered a constructive refusal to deal (OECD, 2009, p. 8[71]);
- Cases in which the conduct results in the exit of competitors (or deters entry), rather than simply reducing their margins; and
- Cases that would result in negative margins for competitors that are as-efficient as the dominant firm.

However, authorities with sufficient resources that wish to prioritise margin squeeze theories of harm could undertake cases that go beyond these limits. In particular, consumer harm (through higher prices or worse quality) may, in certain conditions, result from: conduct that involves access to an important but not indispensable input; conduct that does not immediately lead to competitor exit, and conduct that harms less-efficient competitors (see, for instance, Bostoen (2018[63])). Given the potential uncertainties associated with these cases, some competition authorities have preferred lighter-touch remedies, for instance an order to cease applying the discriminatory conditions (OECD, 2020, p. 10[72]). Nondiscriminatory access rules, for example the imposition of operational separation of upstream and downstream business units, alongside auctions for the input in question, have been discussed. However, whether these remedies are effective in remedying the competition harm remains an open question.

While no digital market cases explicitly citing margin squeeze theories of harm were identified in the preparation of this paper, the discriminatory leveraging theory cited in the European Commission's Google Shopping case could be considered in this context. The case is described in Box 5 below.

Box 5. The European Commission's Google Shopping case

In June 2017, the EU Commission fined Google €2.42 billion for abusing its dominant position in the general search market by favouring its own vertical comparison shopping service in its search results page. The theory of harm considered in this case was novel.

The Commission found that Google provided an "illegal advantage" to its own comparison shopping service by demoting rivals and presenting its own service in a more favourable position in its search results. In particular, Google was found to have leveraged its position in the market for general search results to benefit its offering in comparison shopping services (found by the Commission to constitute a separate market from general search). The Commission identified specific evidence of drops in traffic to rival comparison shopping services because of Google's practices. The Commission argued that Google's self-preferencing conduct foreclosed competing comparison shopping sites from the market, which reduced consumer choice.

It is interesting to note that the US FTC conducted an investigation into Google's search practices but ultimately closed its investigation into allegations of Google's "search bias".[37] The FTC found that changes in how Google displayed its content (through algorithm and design changes) could be viewed as quality improvement for the product (search results) and did not find the practices were anticompetitive. The Turkish Competition Authority also discontinued a similar investigation.

Source: European Commission Decision in Case AT.39740. 27 June 2017, https://ec.europa.eu/competition/antitrust/cases/dec_docs/39740/39740_14996_3.pdf.

Key considerations for margin squeeze

- Margin squeeze arises when a dominant firm narrows the margins of its competitors. This can take the form of:
    - Cross-subsidisation, in which case a firm with upstream market power can charge high prices to all downstream firms, and charge low prices for its downstream product. As a result, rivals' costs will be higher and prices will be lower (or uncompetitive). Thus, the firm's higher earnings may subsidise lower downstream prices. This strategy can be assessed as predatory pricing.
    - Discrimination, in which a firm offers lower prices or better non-price terms to its downstream offering relative to other downstream rivals. This conduct can be considered an anticompetitive strategy to raise rivals' costs in some jurisdictions.
- Margin squeeze cases should carefully consider potential effects on investment incentives, and could be limited to cases in which clear consumer harm can be demonstrated.
- Authorities may wish to focus on cases involving essential (as opposed to important) inputs, and the exit of as-efficient competitors, although there may be cases in which margin squeeze that does not meet these criteria can cause consumer harm.

Exclusive dealing and loyalty discounts

Some digital market abuse of dominance cases have focused on efforts by a dominant firm to obtain exclusivity (or at least a high share of customer purchases) in a market. These terms can either target a supplier (ensuring the supplier sells only to the dominant firm) or a customer (ensuring that the customer only purchases from the dominant firm). They can take the form of explicit exclusivity clauses in contracts, as well as discounts based on either a customer's total purchases or the share of its purchases made from the supplier in question.

The effect of exclusivity agreements and loyalty rebates on competition will depend on the specific circumstances of each case. For instance, these measures can be efficiency-enhancing, by preventing free riding on investments made by suppliers in distribution processes, or by enabling more efficient pricing (see, for example, OECD (2016, pp. 6-7[74])). These strategies may in fact increase competition in some traditional markets, for example, by strengthening competition between different brands by having dedicated retailers for each. However, exclusivity agreements and loyalty discount may not be the only way of achieving these objectives, and certain forms are more harmful than others (e.g. volume-based rebates may be more justifiable than those targeting a firm's share of a customer's purchases) (OECD, 2016, p. 5[74]).

These business strategies can give rise to competition concerns given that their practical effect may be anticompetitive, and may not have an objective business justification beyond the exclusion of rivals. Since their practical effects can be the same, exclusivity agreements and certain types of loyalty discounts will be dealt with together here. In particular:

- A dominant firm may establish exclusive supply contracts to raise rivals costs. These exclusivity agreements can raise the costs of the dominant firm's rivals and prevent them from competing in the market. For example, an exclusivity agreement can deny rivals

access to a key input (the same type of input that would give rise to refusal to deal concerns described above), or to a share of supply that is sufficient enough to drive up the cost of the remaining supply (Krattenmaker and Salop, 1986[75]).

These concerns were assessed according to whether the conduct would prevent a firm as efficient as the dominant firm from competing in the market, given the impact of the supply conditions on margins, in the EU's 2018 Qualcomm case, described in Box 6 below. One particular subject of debate in this case was the appropriate cost margin to use: the European Commission found that the significant research and development costs required in the market would need to be incorporated into any price-cost tests, such as the asefficient competitor test. While this case applied to a relatively traditional set of issues involving a physical input, the European Commission has also issued a fine with respect to Google implementing exclusivity agreements with third-party websites that hosted advertisements.[38]

- A dominant firm may establish exclusive contracts or discounts with customers to deny rivals scale or network effects. Exclusivity strategies can also be have the effect of raising rivals costs, however, it is difficult to conceptually differentiate cases where a firm is simply competing aggressively, with cases in which it is abusing its dominance. Some exclusivity agreements or discounts can be more effectively treated as predatory pricing – a temporary low-pricing strategy to induce rivals to exit, at which point the firm can use its enhanced market power to charge higher prices (dealt with further below).

  However, there are other cases in which exclusivity clauses or discounts do not involve the firm in question sacrificing its profits in the short-run (OECD, 2016, pp. 8-9[74]). This can take place in multisided digital markets, for example, when a firm

uses exclusivity discounts on one side of the market to raise its rivals costs, but makes up for its losses in another market. Etro and Caffarra (2017[76]), for example, have developed a theoretical model to analyse the conditions in the Google Android cases (undertaken by the European Commission and the Competition Commission of India, as described below). The model shows how a dominant firm can use exclusivity payments to deny rivals scale, and can then use a divide and conquer strategy to minimise any exclusivity payments (suggesting that any profit sacrifice would be minimal).

More generally, exclusivity strategies are a particular concern in digital markets. They can take alternative forms, including discounts in the form of free add-on services, and efforts to limit the portability of data or ease with which consumers can use multiple services at once (referred to as multi-homing). Given that they can be used to prevent rivals from obtaining a sufficient user base to generate network effects, exclusivity agreements can have the effect of raising rivals' costs and reducing market contestability (OECD, 2018, p. 22[34]). Others have suggested that, by preventing consumers from multi-homing, exclusivity strategies can exaggerate the tendency of markets to "tip" into a monopoly (Stigler Committee on Digital Platforms, 2019, pp. 72-73[4]). Thus, there may be a need to pay particular attention to the effect of this conduct in digital markets, and consider whether there is an economic justification for the conduct beyond the exclusion of rivals (OECD, 2018, p. 23[34]).

- A dominant firm uses loyalty discounts to impose a "tax" on rivals' sales. A dominant firm can also offer rebates to consumers in order to impose a tax on a customer's purchases from its rivals. For example, take a case where firm A offers its customer a rebate on all

of its purchases of a product, as long as the customer obtains at least 90% of this product from firm A. Therefore, if the customer purchases 100 units of the product, and 90 from firm A, it will obtain the rebate. If the customer were considering purchasing its 101st product from firm A's rivals, the cost of this product would be substantial: not only would it include the price of the product, it would also include the lost rebate on all 90 units purchased from firm A. This logic was the basis for two monopolisation cases in the US, including one in the digital sector involving Intel (see, for instance, OECD (2016, p. 10[74])). These rebates may be particularly harmful when the explicitly reference certain rivals.

Box 6. The European Commission's 2018 Qualcomm case

In 2018, the European Commission fined Qualcomm €997 million after finding that it had abused its dominant position by making exclusivity payments to Apple, a key customer. The Commission's decision first established Qualcomm's dominance with respect to LTE baseband chipsets, a mobile telephone component. Qualcomm's dominance was illustrated by its market shares and significant barriers to entry, including: possession of standards-essential patents and access to other technology licences, and the importance of selling a portfolio of products (thus, entrants with a single product would find it difficult to compete). Further, the Commission found that there was not sufficient buyer power to constrain Qualcomm's dominance.

The case focused on exclusivity payments made by Qualcomm to Apple, which would be terminated if

Apple introduced a phone with a rival chipset. The Commission reviewed evidence that suggested Apple considered switching suppliers, but was deterred from doing so because of the rebate. Given the significant importance of Apple as a customer, accounting for on average

a third of the market, the Commission found that Qualcomm's exclusivity payments affected the entire market. Specifically, the payments prevented rivals from being able to compete in the market.

The Commission determined that the conduct harmed both competitors and consumers in the market. Qualcomm provided a margin analysis to argue that the conduct would not have prevented an as-efficient competitor from vying for Apple's business. However, the Commission found that this test was not reliable, given it did not factor in R&D costs and it overstated the contestability of certain portions of the market. More broadly, the Commission found that Qualcomm did not demonstrate that there were consumer benefits from the exclusivity payments which would outweigh the potential for harm.

Source: European Commission Decision in Case AT.40220, 24 January 2018, https://ec.europa.eu/competition/antitrust/cases/dec_docs/40220/40220_2702_4.pdf.

As noted above, exclusivity and loyalty strategies may have the effect of strengthening competition in some cases. In digital markets, they may lead to vigorous competition for each consumer (rather than a share of each consumer's spending) and competition for the market – in other words, a tendency for firms to compete aggressively to become a dominant player in a market (in other words, "competition for exclusivity" (OECD, 2018, p. 117[34])). This resulting dominant position should be temporary when there is competition for the market, however. When exclusivity strategies are used to deny potential rivals the ability to contest a dominant firm's position by preventing them from generating a given base of network effects, this type of competition may be undermined. Thus, in order to assess the impacts on consumers (not required in all jurisdictions), a careful assessment will be needed to determine whether a firm undertaking

these strategies is subject to competitive pressure from potential entrants (and whether the exclusivity strategy prevents entry). In the absence of such pressure, some exclusivity strategies may prevent competition within the market, in which case they are likely to harm consumers and require remedies. Such remedies could, for example, include a requirement to stop making exclusivity payments or imposing these agreements on customers (Etro and Caffarra, 2017[76]).

Potential sources of evidence for exclusivity and loyalty discount cases

Some key potential sources of evidence for assessing exclusivity and loyalty discount theories of harm are summarised in Table 4 below.

Table 4. Potential sources of evidence for exclusivity and loyalty discount cases

Issue to be evaluated	Sources of evidence
Business relationships and purchasing patterns	• Information regarding consumer purchasing patterns (information requests, sales data before and after the conduct, interviews) or current and previous supply arrangements (sales contracts and sales data) • Information regarding the impact of the conduct on prices (list prices, average paid by consumers) and other non-price factors (including sales agreement terms) • Information regarding business strategy associated with conduct (internal documents, public commentary)

	• Information on the extent of the rebate or exclusivity clause (how much of the market is offered, and takes up exclusivity clauses or loyalty rebates, the size of any loyalty rebates)
Network effects and economies of scale	• Information regarding the importance of network effects for product quality and revenue generation (internal documents and information requests, consumer surveys) • Information from recent, potential or failed entrants regarding the role of network effects and scale economies in being able to enter (business plans, financial data, analyses of the impact of the conduct on entrant volume)
Effects on consumers	• Information regarding the business model and the product quality of potential rivals or rivals whose exit occurred after the conduct • Identification of efficiencies from exclusivity or loyalty agreements and effect on consumers (information requests regarding investments made that justify exclusivity, impact on average prices and terms)

Key considerations for exclusive dealing and loyalty discounts

- Exclusivity agreements and loyalty discounts can be aimed either at a customer's purchases from rival firms, or a supplier's sales to rival firms. They can generate efficiencies and, in some cases, enhance competition. For example, exclusivity agreements may lead to vigorous competition for the consumer, rather than competition for a share of a consumer's purchases.
- However, in digital markets, several types of competitive harm may emerge.
    - A dominant firm can use exclusive contracts with suppliers to raise rivals' costs for inputs.
    - In other cases, a dominant firm may use exclusivity clauses or loyalty discounts to deny rivals sufficient scale or network effects to compete. In digital markets, this can take the form of de-facto exclusivity strategies that limit consumers' multihoming. This can lead to the tipping of a market into monopoly.
    - Loyalty discounts and rebates can also be used to effectively tax rivals' prices – a theory that has been applied in the digital sector.

Tying and bundling

Digital products often feature modularity or linkages with other products, whether in the form of hardware, software, or web-based services. These linkages can come from the demand side, for example, when one product complements another by providing additional functionality. Linkages can also emerge on the supply side, given that they may use similar inputs (e.g. patented technologies, components, programs or access to users).

In general, when the current or potential consumers of different digital products overlap, firms may have an incentive to tie[39] or bundle[40] these products together. If the firm has market power over at least one of the products, it is possible that tying or bundling can harm consumers and competition. Specifically, a firm could leverage market power in one market to foreclose competition in another. This harm will emerge only in specific situations (described further in Box 7 below), and thus abuse of dominance concerns involving tying and bundling are evaluated based on their likely effects – in other words, the use of these strategies by a dominant firm cannot always be assumed to be harmful.

Box 7. Scenarios of foreclosure through tying or bundling

Economists have extensively studied the potential anticompetitive effects of tying and bundling. Those associated with the Chicago school have suggested that a firm would never have an incentive to foreclose competitors by tying or bundling a monopoly product with another product. For example, if the products were complements and the market for the firm's non-monopoly good was competitive, then the firm would not need bundling or tying to obtain the monopoly profit for the "system" of both goods. If the products were weak substitutes or unrelated, then a similar logic would apply – bundling or tying could actually reduce the firm's profits – see, for example Neven (2005, pp. 22-23[77]). Thus, any tying or bundling by a firm would be justified by efficiencies, such as economies of scope, protecting goodwill (e.g. protecting the reputation of a product by preventing the sale of poor-quality complements) or efficiency-enhancing price discrimination, rather than the exclusion of competitors (Holzweber, 2018, p. 349[28]).

Subsequent research has sought to identify scenarios in which this logic does not apply, and thus where tying and bundling can be used to foreclose competition. These scenarios, which are common occurrences in digital markets, include:

- When there is imperfect competition in the non-monopoly market, suggesting there are additional profits to be gained from tying or bundling (Martin, 1999[78]). For instance, significant entry barriers in the non-monopoly market could render tying or bundling profitable in certain conditions – see OECD (2020, p. 16[79]).
- When the product being tied to the monopoly product is a complement with outside uses. Take the example of a complement product that can either be used as a standalone product, or as a complement to the monopoly product. Tying or bundling could deny rivals any sales of the complement when consumers intend to use it with the monopoly product. In some cases, this could mean that the rivals do not have sufficient scale to operate profitably in the market, and will thus exit. Such an outcome may be a particular risk when products form a system, for example when software is tied to a hardware product and is not compatible with other hardware systems. This could prevent rival hardware producers from operating (Church, 2008[80]).
- When there are repeated purchases of the non-monopoly product, for example when consumers tend to purchase new versions or upgrades (Carlton and Waldman, 2005[81]).
- When there are strong network effects, which could render bundling and tying profitable in order to deny rivals sufficient network effects (Bourreau and de Streel, 2019[82]).
- When the firm has market power, but is not a monopolist, in the original market. Tying and bundling can be a profitable strategy, particularly if the two products are complements (Neven, 2005, p. 38[77]).

While these factors suggest that firms can theoretically have an incentive to tie or bundle products for purely anticompetitive reasons, in reality there are often business justifications for this conduct. Thus, it may not be straightforward to determine which effect is relatively more important, and the corresponding overall impact on consumers.

Tying and bundling have been a longstanding focus of digital abuse of dominance cases. For example, the US Department of Justice opened its case against Microsoft, regarding tying Internet Explorer with the Windows operating system (described in Box 8 below), as far back as 1998.[41] Recent cases involving the new digital giants suggest that these concerns will continue to be a major focus of abuse of dominance enforcement.

Box 8. The US Department of Justice's Microsoft case

In October 1998, the Department of Justice (DOJ) sued Microsoft Corp. for its practice of tying the operating system Windows with the Internet browser Internet Explorer. The theory of harm focused on how a company could use a tying strategy to protect its dominance in the tying product market. Microsoft was accused of limiting the expansion of Netscape Navigator (a competing internet browser) because the underlying middleware (Java) used a programming language which allowed applications to run on multiple operating systems. In other words, the competitive threat was that an eventual Netscape success would have represented an incentive for developers (and users) to use Java, with the risk of creating the basis for the growth of new operating systems.

During the first trial, the District Court (DC) found Microsoft had monopoly power in the market for operating systems and declared the tying unlawful per se. The remedy imposed was

a breakup of Microsoft in two different units: one offering operating systems and the other offering software. The Appeals Court rejected the DC decision, imposing a rule of reason assessment. The Court challenged the first judgment on the basis that it did not take into account the potential efficiencies deriving from the tying (including benefits to consumers), which could have compensated for any anti- competitive effects. In November 2001, Microsoft settled the case with the DOJ, which in part obligated the company to share its Application Programming Interfaces (API) with other companies.

Source: Excerpted from OECD (2018, p. 56[83]), based on United States v. Microsoft Corporation, 253 F.3d 34.

Digital markets have certain characteristics that could make tying and bundling strategies more attractive. In particular, the presence of economies of scale and scope, low marginal costs, network effects and feedback loops all increase the incentives of a firm to bundle products. Further, the nature of digital products could make technical tying and bundling relatively easy to implement – product design can be used to limit interoperability, and create an ecosystem or a seamless interface between different products.

For example, bundling and tying can increase the firm's user base for the tied product (i.e. the product with the competitive market) and generate network effects. Such a strategy could be particularly powerful if the digital market in question exhibits a feedback loop, through which gains in users or output become selfreinforcing. For example, gaining users on a given content platform would increase the value of the platform to advertisers, and the increased funds raised from the advertisers could be used to improve content quality, thus further increasing the user and advertiser base, starting the cycle again.

Bundling and tying that generates economies of scope could also be a strategy to strengthen or protect a firm's market power in its original market (Condorelli and Padilla, 2019, pp. 28-29[13]). This can limit dynamic competition and innovation in the affected markets – see, for example, OECD (2020, pp. 19-20[79])

Identifying tying and bundling in digital markets

Linkages between products are so common in digital markets that it can be difficult to draw the line between what is tying or bundling, and what is not. In particular, tying and bundling theories of harm require the existence of two distinct products. But when a new feature or function is added to a digital product, should it be considered a separate product that is bundled with the original one? One method of tackling this issue is to determine whether the new feature or function is offered on a standalone basis by any other firms in the market (Akman, 2017, p. 346[51]). Further, consumers can be interviewed or surveyed to determine whether there is any demand for the standalone product absent bundling (Holzweber, 2018, p. 356[28]). This approach is advantageous in that it does not require a separate market definition exercise for each product.

Another challenge on the same theme (whether there are two distinct products or not) can be illustrated by the EU's Google Shopping case, described in Box 5 above. Here, there was a debate about whether Google's generic and specialised shopping search products were distinct. A clear understanding of each products' usage by consumers, functionality, potential complementarity (as opposed to substitutability), as well as how they are sold to customers and whether customers would purchase them separately, is needed (Akman, 2017, pp. 346-349[51]).

Further, it can be challenging to determine what kind of conduct consists of tying and bundling. Clauses in a contract that obligate consumers to purchase a certain amount of product A in order to purchase its complement product B are straightforward instances of tying. However, in digital

markets, tying and bundling behaviour can be more subtle than that. For example, if a product has limited or no compatibility with complement products being produced by a competitor, when does it constitute a tie or bundle for the purposes of an abuse of dominance case (or, rather, a margin squeeze)? Asking this question is crucial to avoid mischaracterising the realities of a digital market (for example, confusing tying and bundling with the combination of inputs to create a final product as opposed to an ecosystem of products), which can lead to erroneous enforcement investigations, wasted resources, and potentially harmful effects on business certainty as well as investment incentives.

To answer this question, authorities can look for several indicators.

- First, was there ever compatibility with other firms' complement products? If this is the case, the feasibility of compatibility would be established, and it could be asked whether the firm made an explicit decision to discontinue the compatibility. This would suggest that a technical tie was put in place.
- Second, if there is proof that the complement is viable, for example, due to its compatibility with other rival products, this could also indicate a decision to tie.
- Third, a firm's internal documents can help provide some helpful context. For example, was there ever an intention of enabling compatibility with outside complements? If so, is the lack of current compatibility the result of an explicit tying or bundling, or due to other factors such as a lack of technical feasibility.

These questions can be helpful to determine whether tying or bundling has in fact taken place, but further analysis is needed to understand the effect of these strategies on a market.

Tying and bundling can also take new forms in digital markets, as some have argued. This idea stems from insights into certain biases of consumers, which can be especially pronounced when

they are using digital services. In particular, consumers can be "nudged" into purchasing certain products together, rather than being subject to ties implemented through contractual or technological (e.g. limited compatibility) methods (Holzweber, 2018, p. 353[28]). The tendency of consumers to retain the default option, and for that default to affect their future decisions, is well documented – see, for example, Steffel et al (2016[84]). Thus, strategies such as the pre-installation of a complement product onto a system could have the same practical effects on a market as tying (as was a concern, for example, in the US Department of Justice's complaint in Microsoft).

Other questions about consumer biases have arisen in respect to the European Commission's Google Shopping decision, where there was significant focus on the fact that few consumers consulted beyond the first page of search results. This suggested that the placement of the top search results had a fundamental impact on consumer choices. Reserving the top placement for one's own products, often referred to as "self-preferencing", has been characterised by some as a tying strategy (and was referred to as having "similar effects" to tying in the Commission's decision[42]).

Some have questioned, however, whether these strategies can really be referred to as bundling or tying without coercion – in other words, whether a "nudge" is truly equivalent to more traditional forms of tying such as clauses in formal agreements (Akman, 2017, p. 310[51]). Does demoting one's rivals position in search results constitute tying? It may be that coercion can be established under certain legal systems given that consumers are not given the choice about obtaining the bundle (e.g. seeing the specialised Google shopping search result) (Iacobucci and Ducci, 2019, p. 29[5]). However, this will depend significantly on the conditions of each individual case.

The effect of a nudge (such as pre-installation or prominent listing of certain options) can be conceptualised as a classic form of bundling – mixed bundling. This strategy involves offering

products separately, or together with a discount. Thus, consumers are not obligated to purchase the bundle, but are incentivised to do so. When a digital bundle is the subject of a nudge, consumers are offered an incentive to choose a bundle due to convenience (e.g. lower search costs in terms of finding a product and installing it). These nudges are particularly important in markets for digital products offered to consumers at a price of zero, since any bundle discount cannot take the form of a reduction in price, but must instead occur in non-price characteristics (Iacobucci and Ducci, 2019, p. 23[5]). These strategies may lead to worse outcomes for consumers under certain conditions, as described below.

Tying and bundling theories of harm in digital markets

In many cases, bundling and tying will not have anticompetitive effects, or at least generate significant efficiencies. However, there are some ways in which a firm's tying or bundling behaviour can have the effect of foreclosing competition. Each of these apply to certain characteristics of digital markets which, as described above, cause them to depart from the economic ideal of a perfectly competitive market.

Network effects are a particular focus of tying theories of harm in digital markets. Where network effects are important, the value of a product will depend on the number of consumers that use it. This may lead to more concentrated markets, or even competition for-the-market dynamics, in normal conditions. However, network effects may also be an incentive for firms to attempt to foreclose competition through bundling and tying. In particular, firms can tie in order to deny rivals a user base and sufficient network effects to be able to compete effectively. When such tying is profitable more due to the exit of competitors rather than any additional network effects that it generates, it is anticompetitive. Identifying these situations will require a good

understanding of the firm's strategy and the value the firm places on the additional user base to be acquired for the tied product.

In digital markets with entry barriers, tying can also be a strategy to prevent entry by competitors. This can arise when two complementary products cannot be used separately. If a firm with market power over one product (product A) ties it to its complement (product B), potential entrants to the market for product B will be deterred (Nalebuff, 2004[85]). This is because there will be no demand for product B without product A. Thus, any prospective entrant will need to produce both product A and product B, which can be an insurmountable challenge if there are substantial entry barriers. More generally, the ability of competitors to match the composition of a bundle will be determinative of whether a firm's bundling or tying has anticompetitive effects.

A similar strategy can be used to leverage a monopolist position (or at least position of strong market power) in one market to enter and subsequently foreclose competition in another market. This strategy, called "platform envelopment" (Eisenmann, Parker and Van Alstyne, 2011[86]), often centres around foreclosing access to users through tying or bundling. It can be a profitable strategy particularly when there is a strong overlap of users, or where there are substantial economies of scope that enable firms to provide discounts on the bundle price. As with the entrance deterrence strategy described above, competitors can generally only respond to this strategy if they can find ways to develop a rival to the market for which the tying firm has market power.

Multi-sided digital markets can make the assessment of tying and bundling theories of harm particularly complex. This is because these markets often involve cross-subsidisation. For example, on some platforms, an increase in users on one side will generate benefits for the other side, but the reverse is not true (in other words, cross-platform demand externalities only flow in one direction). In these cases, the side that benefits from externalities will generally subsidise the

other side. Bundling could in fact be a strategy to increase consumption when subsidies are not possible, for example, where the price is already zero and payments to consumers are not feasible (Choi and Jeon, 2018[87]).

In other cases, a bundle can be used to leverage market power on one side of the market in order to gain access to a new group of consumers on the other side (e.g. bundling specialised and generic search results to make sales to a new group of specialised advertisers, the interpretation of Google Shopping offered by Iacobucci and Ducci (2019, pp. 35-37[5])). These situations do not fit the Chicago school theories described above, as there are additional gains to be generated from bundling even if the firm is already a monopolist in one market. One study, which sought to explore the market conditions of the Google Android cases in Europe (involving bundling the Android operating system with a Google suite of applications and search engine – see Box 9 below) found that tying can be a profitable strategy that reduces consumer welfare. In particular, the authors found that in certain circumstances tying can raise prices, reduce innovation incentives, and prevent consumers from choosing alternative unbundled products that offer higher quality (Etro and Caffarra, 2017[76]).

Additional characteristics of the relevant markets can help determine the likelihood of competitive harm. For example, the effectiveness of the tie could be assessed based on whether consumers are prevented from multi-homing because of the tie, or whether they can easily find substitutes. Further, a clear sense of the strength of network effects will be needed to understand the effect on consumers. Akman (2017[51]) contrasts the European Commission's decisions regarding Google with its case regarding Microsoft's bundling of the Windows operating system with Windows Media Player. The latter case involved more clear-cut harm, in her view, because any alternatives installed by a user would not have the same functionality as the pre-installed Windows Media Player, and because the bundling denied competing file players and media formats sufficient scale

(and thus network effects) (Akman, 2017, pp. 352-353[51]). Box 10 below provides a summary of this case.

Box 9. The European Commission and Competition Commission of India's Google Android cases

European Commission

The European Commission fined Google €4.34 billion for abuse of dominance, after finding that Google imposed illegal contractual restrictions on Android device manufacturers and network operators. The Commission found that three types of restrictions sought "to ensure that traffic on Android devices" was directed to the Google search engine, strengthening its dominance in the market for general internet searches.

1. Illegal contractual tying: Google made access to its app store (the play store) conditional on the pre-installation of its Google Search app and Google Chrome browser on Android devices. This resulted in two instances of illegal tying (of the Google Search app and of the Google Chrome browser). The pre-installation of apps reduced the incentive for both manufacturers and users to download competing apps, harming competition.
2. Illegal payments: Google made illegal payments to device manufactures and mobile network operators to ensure exclusive installation of its Google Search app. This foreclosed competitors from the market.
3. Preventing manufactures from installing unapproved versions of Android, an open-source operating system. This restriction hindered the development and distribution of

alternatives, as it meant that manufacturers were required to use Google's Android operating system.

The relevant product market in this case did not include "non-licensable" operating systems such as Apple's operating system (iOS). Such systems were only considered indirect competitive constraints on Google, given that device manufacturers do not switch between the two.

Source: European Commission Press Release: Antitrust: Commission fines Google €4.34 billion for illegal practices regarding Android mobile devices to strengthen dominance of Google's search engine, 18 July 2018, https://ec.europa.eu/commission/presscorner/detail/en/IP_18_4581 , European Commission Decision in Case AT.40099, 18 July 2018, https://ec.europa.eu/competition/antitrust/cases/dec_docs/40099/40099_9993_3.pdf.

Competition Commission of India (ongoing)

On 26 April 2019, the Competition Commission of India (CCI) ordered an in-depth investigation into alleged abuse of dominance by Google in the mobile operating system market. The CCI had conducted

a preliminary investigation into Google's behaviour in relation to its Android Mobile Operating System and found that Google may have abused its dominant position by requiring Android device manufacturers to preinstall Google Mobile Services (GMS). This conduct was alleged to have prevented development of and access by rival mobile applications or services, and thus infringed section 4 of the Competition Act 2002.

Source: Competition Commission of India, Order under Section 26(1) of the Competition Act, 2002 in Case No. 39 of 2018, 16 April 2019, https://www.cci.gov.in/sites/default/files/39-of-2018.pdf?download=1

Box 10. The European Commission's Microsoft/Windows Media Player case

The European Commission initiated proceedings against Microsoft 5 years after the US Department of Justice's exclusionary agreements case. In the EU, the focus was on refusal to supply interoperability information and technical tying.

The Commission found that Microsoft had 90% market share in the operating systems market. It argued that Microsoft leveraged this position to abuse its dominance in two ways, foreclosing competitors.

- The Commission found that Microsoft had abused its position on the operating systems market by tying its Windows Media Player to its desktop operating system (two distinct products [see paragraphs 873-882]). Competitors produced media players separate from operating systems. Users did not have the option of purchasing the operating system without the media player and the Commission held they were thus pressured into using Window's media player instead of a rival's media player. The Court explained that Article 102 was "intended to prohibit dominant undertakings from strengthening its position by recourse to means other than competition on the merits" [paragraph 1070].
- The Commission also found that Microsoft had abused its dominant position by refusing to supply interoperability information and to allow use of that information to rivals in the work group server operating system market. This refusal prevented rivals from developing and distributing products that would compete with Microsoft's products in this market. The Commission moved away from how it had approached refusal of supply in previous cases.

The CFI's decision imposed remedies and a fine of € 497 million. Microsoft was ordered to provide interoperability information and to propose a version of its operating system without

windows media player. Microsoft appealed the decision but the Commission's decision was upheld by the Court of First Instance. Microsoft did not appeal to the ECJ.

Source: Judgment of the Court of First Instance in Case T-201/04, 17 September 2007, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:62004TJ0201&from=en

Assessing the effects of tying and bundling in digital markets

The effects-based analysis in tying and bundling cases means that any potential effects on competition must be balanced against the business justifications and efficiencies generated. Bundling and tying can deliver a range of benefits to consumers, including one-stop shopping and easy to use common interfaces (OECD, 2020[79]). Economies of scale and scope may be passed on to consumers, and envelopment strategies can be used by new entrants to challenge incumbents in a market and drive down prices (Condorelli and Padilla, 2019, p. 35[13]). When there are significant network effects involved, bundling and tying can also increase the value of the product to consumers and thus increase welfare in at least some cases (Iacobucci and Ducci, 2019, p. 41[5]).

Each of these benefits, if they can only be obtained as a result of the conduct in question, should be recognised when assessing potential foreclosure due to bundling and tying.

Further, there are a range of business reasons why bundling and tying could be a good strategy, beyond any foreclosure effects. For instance, while bundling in some cases may be used in multi-sided markets to increase prices and deny rivals scale, in other cases it may be the core of a business model in which at least some products are provided at low or zero prices. In other words, there are cases where, without bundling, a product may not be offered to consumers at all, or would be offered at a higher price.

One critique of the Google Android case, for example, is that the creation of the Android operating system, which introduced new competition into this market, was motivated by protecting Google's search business - in other words, its investment was motivated by an opportunity to cross-subsidise (Siciliani, 2019[31]). Thus, prohibiting bundling would require a restructuring of the entire business model regarding the Android platform, and it is not clear this would generate benefits for consumers. It can be difficult for competition authorities to address these critiques, since it would require finding clues about how the market would have developed without the conduct in question (e.g. would alternative operating systems have been introduced and would alternatives have gained market share but-for Google's conduct?).

Remedies

Remedies in cases involving tying or bundling can be relatively straightforward in form. They can include an order to cease bundling products (i.e. offer the tied or bundled products individually on a standalone basis), or to eliminate contractual ties. They can become more controversial if the tie between the products is technical, since additional investment may be required to undo a tie (note that investments in technical tying can in fact increase the harm on competition by

establishing credibility of the strategy in the minds of consumers – see OECD (2020, pp. 12-13[79]). For example, a remedy may consist of an order to guarantee interoperability between a product and its complements produced by rivals. In fact, interoperability remedies have already been used in several merger cases in digital markets involving potential bundling or tying concerns – see Box 11 and OECD (2020, pp. 43-46[79]). However, as noted above, care should be taken when a remedy may undermine a multisided market business model that relies on cross-subsidisation to generate network effects. In particular, the design of a remedy may involve complex judgments about alternative business models, and thus be particularly intrusive (Colomo, 2020, pp. 29-30[88]).

Box 11. Remedies in the European Commission's review of the Microsoft/LinkedIn merger

On 6 December 2016,[43] the Commission approved the acquisition of LinkedIn, a professional social network (PSN) platform by Microsoft. The transaction was approved at Phase 1, subject to interoperability remedies, which addressed the Commission's foreclosure concern.

During the merger assessment, the Commission considered issues in the area of big data and raised several conglomerate theories of harm. It assessed possible conglomerate effects in five technology markets but found that possible foreclosure and marginalisation of competitors could not be excluded in only one of these markets, the market for PSNs.

Two sets of remedies addressed the concern of technical tying, which the Commission argued could be facilitated by two types of exclusionary practices - possible pre-installation of LinkedIn and interoperability restrictions. The Commission was concerned that Microsoft would leverage its position in the PC markets of productivity software and operating systems (tying markets) to the market for PSNs where LinkedIn is present (tied market), thus foreclosing LinkedIn's competitors and harming competition. The Commission considered that

the potential foreclosure would be further amplified by network effects, thus leading to market tipping in favour of LinkedIn.

The Commission's first concern was that Microsoft would ensure the installation of LinkedIn on all PCs using the Windows operating system. This would increase LinkedIn's user base and decrease the incentive of Original Equipment Manufacturers (OEMs) or users to install competing PSNs. The first set of commitments thus aimed at allowing choice on such installation by both the OEM and the windows user. It allowed OEMs the freedom to choose not to pre-install LinkedIn and allowed users to remove the application if pre-installed by the OEM. It prevented "pushing the installation on users" post purchase, for example, through updates of the Windows OS. The remedy prevented the initiation of exclusive agreements and retaliation against OEMs, in order to ensure OEMs could freely co-operate with competing PSNs.

The Commission's second concern was that Microsoft would incorporate LinkedIn features into its software and withhold necessary technical information to ensure interoperability of competing PSNs with Microsoft's products. The second set of commitments imposed two interoperability obligations: to allow competing PSNs to build add-ins for Microsoft's software and to access Microsoft add-ins. The commitments would also allow users to easily disable LinkedIn features integrated into its products.

Sources: Conglomerate effects of mergers – Note by the European Union, 10 June 2020, https://one.oecd.org/document/DAF/COMP/WD(2020)8/en/pdf, European Commission, Competition

merger brief Issue 1/2017- May, https://ec.europa.eu/competition/publications/cmb/2017/kdal17001enn.pdf, European Commission decision in Case M.8124 Microsoft/ LinkedIn, 6 December 2016.

Thus, remedies can be distinguished according to whether they constitute a negative obligation (e.g. cease bundling products together) or a positive obligation (e.g. make investments to enable interoperability). The latter case could, in effect, imply that one of the products is an essential input, and thus producers of complements need access to the information necessary to ensure compatibility in order to compete (Colomo, 2019, pp. 14-15[55]). An example that illustrates this distinction is the European Commission's case regarding the tying of Windows with Windows Media Player – an initial negative obligation (offer a version of Windows without Windows Media Player) did not cause a significant change in the market. As a result, another remedy was subsequently agreed incorporating a positive obligation to enable access to Windows by rival media players (see, for example, Colomo (2019, p. 15[55])).

Potential sources of evidence for tying and bundling cases

Some key potential sources of evidence for assessing tying and bundling theories of harm are summarised in Table 5 below.

Table 5. Potential sources of evidence for establishing dominance in digital markets

Issue to be evaluated	Sources of evidence
Product relationship and nature of tie or bundle	• Information regarding the relationship between the products and consumer purchasing patterns - i.e. degree of complementarity, substitutability and overlapping consumer base (consumer surveys, firm strategy documents, data on purchases, such as frequency of

	complement purchases, market research on consumer overlap from market analysts) • Information regarding the nature of the tie or bundle (discount terms, interoperability limitations, purchase terms, past interoperability or separate selling) • Information regarding business strategy associated with conduct (internal documents, public commentary)
Network effects and economies of scale	• Information regarding the importance of network effects for product quality and revenue generation (internal documents and information requests, consumer surveys) • Information from recent, potential or failed entrants regarding the role of network effects and scale economies in being able to enter (business plans, financial data, analyses of the impact of the conduct on entrant volume)
Effects on consumers	• Information regarding business model and product or service quality of potential rivals or rivals whose exit occurred after the conduct • Identification of efficiencies from tying and bundling and effect on consumers (information requests regarding investments made that justify tying or bundling, impact on average prices and terms)

Key considerations for bundling and tying

- Bundling and tying strategies may be particularly common in digital markets given the linkages between products in terms of both demand and supply.
- These strategies may benefit consumers when they generate substantial economies of scope or scale, enhance network effects, or otherwise increase quality and convenience. However, when bundling and tying are used as a strategy to foreclose competition, they may be harmful to competition. This can occur, for example, when bundling seeks to deny rivals network effects or prevent the entry of standalone products.
- In multisided digital markets, care must be taken to understand the underlying business model and pricing structure (e.g. in terms of cross-subsidisation) when pursuing bundling and tying cases.
- There is ongoing debate about what constitutes tying in digital markets, for example whether a "nudge" that takes advantage of consumer biases would qualify, and if so, in what circumstances.
- Remedies can include simply making products available on a standalone basis, or enabling interoperability of a product with its complements. However, the effects on cross-subsidisation in multisided business models and investment incentives should be considered.

Exploitative abuses

Several jurisdictions apply abuse of dominance laws to situations where a firm uses its market power to impose unfair prices or other conditions on consumers, also known as exploitative abuses

of dominance. This approach reflects a particular policy decision and philosophy regarding the application of competition law (further discussed, for example, by Gal (2013[89])). In particular, it seeks to use abuse of dominance enforcement to ensure not only that firms do not harm competition by engaging in anticompetitive conduct (exclusionary conduct), but also to ensure that dominant firms do not directly harm consumers with unfair terms, which they can impose only due to their market power (exploitative conduct). Thus, dominant firms are considered to have a "special responsibility" by virtue of their position in the market (using the terminology often applied in the EU context, see Sauter (2019[90])).

Competition authorities concerned about the conduct of certain firms in digital markets have begun to use, or consider using, exploitative abuse of dominance theories of harm. These require adaptations to the specific circumstances of digital markets. In particular, exploitative abuses in traditional markets may arise in the form of the charging of excessive prices to consumers. In digital markets, other forms of exploitation may arise, for example worsening the privacy terms and data collection terms offered to consumers (Stucke, 2018[91]; OECD, 2020[60]) , or explicitly limiting the ability of consumers to take their content to other platforms – both of which imply a degradation of quality rather than charging excessively high prices. Alternatively, an abuse could be conceptualised as the charging of excessively high non-monetary prices, such as data collection or advertisement exposure (Gebicka and Heinemann, 2014[92]; OECD, 2018[93]). Digital markets may also feature personalised pricing or otherwise customised terms of service, which could in some cases constitute an exploitative abuse of dominance through price discrimination (explored in detail in OECD (2018[94])).

A core challenge in any exploitation case revolves around how to determine whether the conduct in question is "unfair". From an economic perspective, non-price effects can have as much of an impact on consumer welfare as price effects. However, the inclusion of non-price factors in digital

market exploitation cases can result in significant uncertainty and ambiguity for market participants (Gal, 2013[89]). In particular, care is needed to ensure that any selected non-price dimensions of competition are those that are actually important to consumers, rather than reflective of a value judgment about what consumers "should" care about (OECD, 2018[32]).

To illustrate this complexity, Bostoen considers the data collection of Facebook in the context of the European Court of Justice's finding that a price is "excessive because it has no reasonable relation to the economic value of the product supplied" (Bostoen, 2019, pp. 278-279[95]). In particular, the analysis compares Facebook's advertising revenue per user with a survey in which consumers estimated the value of Facebook to them (specifically, how much they would need to be paid to stop using Facebook). The analysis found that consumers value Facebook beyond the company's revenue per user. These findings are not on their own decisive, as there are questions about how much Facebook users know about the use and collection of their data, and current revenue may not be a reliable indicator of future data value. Further, it does not disprove whether current price and non-price conditions reflect monopoly power. However, it does illustrate the need for better analytical tools and jurisprudence to assess whether a dominant firm is offering excessive prices or otherwise unfair terms. The German Bundeskartellamt's case sought to avoid the challenges associated with this type of analysis by addressing concerns about Facebook's data collection in terms of unfair terms rather than excessive prices (Botta and Wiedemann, 2019, p. 8[96]), as set out in Box 12 below.

Box 12. The German Bundeskartellamt's Facebook case

In March 2016, Germany's competition authority, the Bundeskartellamt, launched an abuse of dominance investigation of Facebook in respect of its data practices. In February 2019, it found

that Facebook had abused its dominant position in the social media market in respect of the collection of "off Facebook" data (Bundeskartellamt, 2019[97]). That is, data collected from unrelated third parties. In particular, in using Facebook's services, users had to agree to Facebook collecting their data both on Facebook, and across an extensive range of third party websites and apps. Such data was used to support Facebook's online advertising services, which contributed 98% of Facebook's revenue in 2018 (Bundeskartellamt, 2019[97]).

The Bundeskartellamt found that Facebook was dominant in the social media market in Germany. It also found that Facebook had not gained meaningful consent from users in respect of its data tracking practices, and the merging of this data to users' Facebook profiles. In assessing the data practices of

Facebook, the Bundeskartellamt applied the standards in Europe's General Data Protection Regulation

(GDPR) and found Facebook's practices lacking, which it found amounted to an abuse of dominance. It argued that Facebook's dominant market position essentially put consumers in a "take-it-or-leave-it" position and it found that Facebook's data practices served to entrench Facebook's dominant position in the national social network market (Bundeskartellamt, 2019[98]; Bundeskartellamt, 2019[97]).

Facebook appealed the decision to the Higher Regional Court in Dusseldorf, who suspended the order in August 2019 (CPI, 2019[99]; Higher Regional Court Düsseldorf, 2019[100]), relieving Facebook from implementing the decision. In particular, the Court did not accept that a possible violation of privacy rules would automatically trigger a violation of antitrust rules in the case of a dominant company. In addition, the court was of the opinion that users decide autonomously whether they agree with Facebook's terms and conditions when signing up for the service. It further found that Facebook's data collection was not exploitative since

consumers could continue to make the same data available to other companies. Moreover, it found that the Bundeskartellamt did not demonstrate how Facebook's data practices damaged competition.

The Bundeskartellamt appealed the suspension to the Federal Court of Justice. In its decision on interim proceedings of 23 June 2020 regarding enforceability, the Federal Court of Justice (Bundesgerichtshof,

BGH) ruled in favour of the Bundeskartellamt and reinstated the prohibition order (Bundesgerichtshof, 2020[101]). The BGH found that there were no serious doubts as to Facebook's dominant position in the German market for social networks nor Facebook's abuse of this dominant position by using the terms of service prohibited by the Bundeskartellamt. In deciding the case, the BGH found that the terms of service deprive Facebook users of choice, and that this could impede competition, both in social network markets, and potentially, online advertising markets, which also rely on consumer data.

However, the BGH did not agree with the Bundeskartellamt's approach to using the GDPR as the relevant standard for assessing an abuse of dominance. The case is ongoing and pending a decision by the Düsseldorf Higher Regional Court on the merits (Podszun, 2020[102]).

Source: Excerpted from (OECD, 2020[103]).

Remedies are another key challenge for exploitative abuse of dominance cases in digital markets. Concluding that a firm's prices or data collection are excessive, for example, would also require a judgment of what level would not be excessive. Some have opined that this would often leave competition authorities in the difficult position of acting as a sector (or privacy) regulator, setting prices and other terms for dominant firms (Botta and Wiedemann, 2019[96]). While there are relatively few examples to illustrate a practical approach in dealing with these challenges, some

measures to address data-related exploitation could include: the implementation of certain standards (such as the EU's General Data Protection Regulation); requirements for data portability; and providing meaningful opportunities for consumers to make choices (e.g. by requiring opt-in procedures for data collection) (Botta and Wiedemann, 2019, p. 13[96]).

Key considerations for exploitative abuses

- Some jurisdictions consider the imposition of excessive prices or unfair terms on consumers by dominant firms to be an abuse of dominance. Other jurisdictions use alternative tools, including market studies or regulation.
- In digital markets, there may be unique concerns related to terms other than the monetary price of a product, including data collection, advertising exposure, or some other dimension of quality. Concerns with respect to these parameters could be evaluated as excessive prices or unfair terms, depending on the specific case and legislation in the jurisdiction.
- Determining what prices are excessive, or what terms are unfair, has always been a challenge in exploitation cases, including when crafting remedies. These challenges may be compounded in digital markets, given that the focus may be on parameters unrelated to monetary prices. Without a clear yardstick to evaluate terms, there may be significant uncertainty among digital market participants about exploitative abuse of dominance enforcement.

New forms of abuse of dominance in digital markets

The typology of abuse of dominance cases described above can help authorities determine whether the facts of a case can be compared with other well-established theories of harm. Abuse of

dominance legislation in many jurisdictions has also been applied outside of these specific situations. The unique market conditions and forms of conduct that have arisen in digital markets have led to proposals to develop new theories of harm. These theories of harm have, in some cases, attracted controversy, given that they do not fit in with established theories and analytical frameworks. In particular, some commentators have suggested that the new theories depart too far from historical (Chicago school) foundations and create uncertainty for incumbents in a market (Akman, 2017[51]; Colomo, 2019[55]; Colomo, 2020[88]; Manne and Wright, 2011[6]). However, as shown below, in some cases links can be drawn between new theories of harm and more established ones, which can be used to help structure and evaluate the former.

Forced free riding

This theory of harm focuses on the unique role that digital platforms play, particularly on transaction or content platforms which are used by consumers to sell products, or provide content, to their customers. Forced free riding arises "when a platform appropriates innovation by other firms that depend on the platform for access to consumers" (Shelanski, 2013, p. 1699[104]). Thus, a dominant platform can take advantage of its role as an intermediary, including its access to data about both sellers and consumers, to try to foreclose competition in the markets associated with the platform. This type of strategy can be an alternative to foreclosing access to a platform, since it could allow the platform to reap the benefits of their downstream rivals' innovation (Shelanski, 2013, p. 1700[104]).

One example of this strategy is a practice referred to as "content scraping." For example, in 2013 the US

FTC considered whether alleged content scraping by Google constituted an "unfair method of competition."[44] In particular, the practice involved Google presenting content from certain

downstream rivals (e.g. restaurant review platforms) in a specialised search results box, thus denying them web traffic from the search engine, and allegedly threatening them with delisting from Google results for challenging this conduct (Shelanski, 2013, p. 1699[104]). Google agreed to discontinue the practice and the FTC did not pursue it further, so the precise analysis and application of abuse of dominance theories of harm to this practice has not yet been fully elaborated in a formal decision.

Another potential form of forced free riding relates to transaction platforms. Dominant firms that facilitate transactions on digital platforms could make use of data regarding both buyers and sellers in order to introduce their own products for sale on the platform (Khan, 2017, p. 782[25]). The potential abuse would arise if the position of the platform as transaction facilitator and holder of a significant amount of product data could be used in order to foreclose competitors. For example, the European Commission has announced the opening of an investigation into Amazon that could include this type of theory of harm.[45]

The underlying economic theory and, in particular, necessary conditions for harm to emerge in these types of cases, is still being developed However, there are some similarities with refusal to deal cases – namely the existence of an important asset (in this case a platform), without which downstream firms will have little access to consumers. While the precise form of conduct, and thus overall effects, will be different (particularly since it may affect downstream firms' innovation incentives), some of the same criteria as refusal to deal cases could be applied, namely those regarding indispensability of the platform. Alternatively, margin squeeze theories may be a better fit in some cases – if an online platform provides product listings, it may act as an upstream provider, and its "price" for downstream firms may include data and product information. Thus, margin squeeze analysis could determine whether this "price" would exclude competitors or at least raise prices (or worsen quality) for consumers).

Abusive leveraging or self-preferencing

A similar new theory of harm relates to a dominant firm active in multiple related markets (whether they are vertically related, as an input and completed product, or horizontally, for example as complements). However, instead of appropriating a competitor's innovations, abusive leveraging (or discriminatory leveraging) theories of harm focus on ways in which a firm can use (or leverage) its dominant position in one market to favour its products in a related market (see, for instance, Colomo (2020, p. 5[88])). This type of conduct, which can take the form of self-preferencing (for example providing platform access advantages to its own product), has been identified as a potential exclusionary abuse of dominance by some competition authorities.

There have been relatively few cases in digital markets focused on this theory of harm. However, given that many digital platforms operate in multiple related markets, and their business models may be premised on recovering investments in one market from another, these cases may grow in frequency. The European Commission's Google Shopping case, described in Box 5 above, is one example. By contrast, the US Federal Trade Commission and the Turkish Competition Authority did not find a competition law infringement in relation to this conduct (OECD, 2018, p. 38[105]). In addition, the Polish Office of Competition and Consumer Protection (UOKiK) has opened an investigation into an online shopping platform called Allegro. UOKiK is in particular concerned that Allegro may have obtained advantages through better information about the platform's algorithm, and preferential treatment in terms of sales, promotions and advertisement campaigns.[46]

These theories of harm bear some similarities to refusal to deal theories of harm (since they relate to an important input). In particular, a firm may use leveraging to de facto foreclose competitors, rather than explicitly doing so and triggering a refusal to deal case. For example, a firm may take

advantage of consumer behavioural biases, such as default bias, or a tendency to select more visible options, in order to foreclose competitors. However, the conditions associated with these cases with respect to indispensability were not considered in the EU's Google Shopping case. In particular, the European Commission argued that since the remedy was based on overarching principles, rather than containing a positive obligation for Google to share an asset or enter into an agreement with other firms, the requirements of a refusal to deal case did not apply (see discussion in Colomo (2019, pp. 23-24[55]). Others have asked whether abusive leveraging can be differentiated from other abuses of dominance given the nature of the relationship between the firms: it is not clear that the firms appearing in Google results are in a supply or business relationship with Google (Akman, 2017, pp. 330-331[51]).

Abusive leveraging theories of harm could also exhibit some similarities with tying and bundling theories of harm. Both focus on the leveraging of market power in one market to foreclose competition in a related market. Tying and bundling behaviour could certainly constitute "self-preferencing". Further, abusive leveraging conduct could be conceptualised as a form of tying or bundling in some cases, for example, technical tying through platform design, or even mixed bundling-type discounts and other incentives. Additionally, the single monopoly profit theorem would be subject to the same exceptions in leveraging cases as those set out above with respect to bundling and tying.

A final type of abuse of dominance infringement to which abusive leveraging could be similar is one focusing on margin squeeze via discrimination. That is, a firm engaged in abusive leveraging is in fact discriminating against its competitors when providing access to the input, or enabling compatibility with the complement in question. While these theories have traditionally applied to regulatory sectors (Colomo, 2020, pp. 8-9[88]), they are eliciting greater attention in digital markets (Bostoen, 2018[63]; OECD, 2020[72]).

As with the other theories of harm associated with leveraging and refusals to deal, economic intuition suggests a need for a case-by-case approach to abusive leveraging. In particular, leveraging may be a fundamental part of a business model built on cross-subsidisation among products, where the line between product markets may not be obvious. Like vertical integration, leveraging can generate efficiencies for consumers and provide legitimate rewards for innovation or competitive differentiation.

The design of remedies may need to reflect the developing nature of abusive leveraging theories of harm. For example, Colomo argues that more interventionist remedies containing positive obligations could be reserved for cases where more demanding conditions are met (i.e. where indispensability is clear) (Colomo, 2019, pp. 42-43[55]). In contrast, when new abusive leveraging theories cannot be easily fit within established theories of harm, priority could be given to negative remedies – e.g. orders to cease a given type of conduct. Similarly, caution is needed when imposing remedies that involve a change in business models that could affect other sides of a multi-sided market.

An alternative perspective would point to the risk of relying on light-touch remedies that may not resolve anticompetitive conduct, given an infringement will have already been found if remedies are being contemplated. The ineffective initial remedy in the European Commission's Microsoft Windows Media Player case could illustrate this risk. Further, when concerns relate to discriminatory leveraging theories of harm, a negative obligation may eventually require the definition of access conditions to an input, making the distinction between positive and negative obligations less clear.

Privacy policy tying

Condorelli and Padilla (2019[13]) have identified a particular type of envelopment strategy that may arise in digital markets. Specifically, privacy policy tying occurs when a dominant firm imposes data collection terms on its consumers that allow it to use consumer data in a wide set of circumstances. It can use data collected in the market for which it is dominant to enter a new market with an overlapping user base (even if the products are not related in terms of usage). It can then compete aggressively in the target market, for example, by setting a price of zero, effectively subsidised by its position in the original market. Then, it can use the data it collects in the new market to strengthen its position in its original market. This strategy may be particularly effective at insulating the firm from competition if its would-be competitors in the original market could have first built up their capacity in the new market (which this strategy would prevent them from doing).

The authors suggest that this behaviour could be addressed as either an exclusionary abuse of dominance, or a combination of exclusionary and exploitative abuse (considering the imposition of broad data usage terms on consumers). Further, they note that data portability remedies could be an appropriate tool, but would be more effective in preventing ex ante anticompetitive outcomes rather than trying to restore competition after the implementation of a privacy policy tying strategy (Condorelli and Padilla, 2019, pp. 39-40[13]).

Key considerations for new digital theories of harm

- Several new theories of harm have been identified in digital markets:
    - Forced free riding occurs in situations where firms rely on a dominant firm for access to consumers (e.g. the dominant firm is a platform), and the dominant firm appropriates their innovations.
    - Abusive leveraging occurs when a dominant firm uses its position in one market to gain or increase market power in a related market.
    - Privacy policy tying occurs when a dominant firm imposes data collection terms on consumers that allow it to enter new markets with overlapping consumers and, in so doing, entrench its position in its original market.
- These new theories may in fact be similar to traditional abuse of dominance theories in some cases (forced free riding could be subject to similar analysis as refusals to deal; abusive leveraging could be considered a refusal to deal or tying).
- The traditional theories described in the sections above are not necessarily exhaustive – new forms of exclusionary conduct may arise. However, where new theories depart from established theories, care may be needed given the impact on market participant certainty and the need to ground exclusionary concerns in economic analysis.

Limitations and proposed changes of abuse of dominance cases in dealing with digital market concerns

As described above, abuse of dominance cases in digital markets involve a range of analytical challenges. Further, these cases can be lengthy and resource-intensive for competition authorities. This is particularly the case where an effects-based analysis is required, given that the economic understanding of abusive conduct does not support an automatic assumption of harm (e.g. if a dominant firm engages in tying and bundling, it cannot be assumed to be harmful). As a result, there is an active debate in the competition policy community about (1) how abuse of dominance enforcement should be modified to take into account the unique features of digital markets and (2) when abuse of dominance cases are the right tool to tackle a given competition concern. Some proposals regarding each theme are discussed below.

Modifying current approaches to abuse of dominance

A range of changes to current abuse of dominance procedures and legislation have been proposed to address concerns specific to digital markets, many of which are the matter of significant debate. These include:

- More guidance: One particular recommendation points to the need for greater clarity, transparency and predictability in abuse of dominance cases. This need may be particularly pronounced where there is no established case law in a jurisdiction with respect to a given theory of harm (e.g. when competition concerns have been addressed through remedy negotiations). Guidance could take the form of published guidelines, or even legislative change that clarifies how key concepts would apply in digital markets. Market participants would benefit from a better sense of the conduct that could give rise to competition concerns, and the analytical frameworks to be used. For example, the Competition Law

4.0 Commission in Germany outlined the need to clarify what constitutes market power in digital markets and to publish guidance on this topic (Competition Law 4.0 Commission, 2019, p. 31[106]). In particular, the Commission proposed clarifying the situations in which access to data could provide a firm with a dominant position (Competition Law 4.0 Commission, 2019, pp. 36-37[106]).

- Applying new economic tools and modifying existing ones: Other proposals focus on the economic tools used by competition authorities to assess the effects of conduct. For example, one report called for competition authorities to more extensively consider non-price dimensions of competition in their assessments, for example, by analysing quality-adjusted prices, and to make greater use of behavioural economic insights when assessing both market power and the effects of conduct (Stigler Committee on Digital Platforms, 2019, pp. 95-96[4]).
- Rebalancing the risks of over- and under-enforcement: As described above, abuse of dominance frameworks and case decisions reflect a judgment about the right balance between false positives and false negatives. Some commentators have suggested that the current approach in at least some jurisdictions is unduly biased in the direction of avoiding false positives – in other words, that there is a risk of under-enforcement. For example, an expert panel commissioned by the European Commission proposed that they "err on the side of disallowing potentially anticompetitive conducts" (Crémer, de Montjoye and Schweitzer, 2019, p. 4[107]). Similarly, a US report observes that courts have generally been reluctant to question product design decisions in abuse cases, but proposes that this should not be the case in digital markets given the significant impact of those decisions on competition (Stigler Committee on Digital Platforms, 2019, p. 98[4]).

- Greater use of interim measures to protect competition: Recognising the rapid pace of evolution in digital markets and the length that abuse of dominance cases may take (particularly if there are court challenges), some have identified the need for authorities to act quickly to prevent harm in a market. Fast action is particularly important given that it may be difficult to undo the damage once competitors are excluded. The expert panel commissioned in the UK on digital competition issues has, for example, recommended greater use of interim remedies to address potentially abusive conduct, which can avoid potential harm in the short-term while a case is decided (Digital Competition Expert Panel, 2019, pp. 104-105[49]). Box 13 below provides an example of the use of interim measures by the French competition authority in a digital case.
- Legislative change: Some of the changes being proposed with respect to abuse of dominance enforcement would require amendments to legislation. These include:
  - Removing the requirement to define markets, and instead allow market power to be inferred by the presence of anticompetitive conduct that is not disciplined by competitive pressures (Schweitzer et al., 2018, p. 1[108])
  - Reversing the burden of proof so that certain conduct is presumed anticompetitive unless an incumbent can demonstrate otherwise. This could notably be introduced for interoperability issues in markets with strong network effects (Crémer, de Montjoye and Schweitzer, 2019, p. 51[107]), self-preferencing when a platform serves as "intermediation infrastructure of particular relevance" (Crémer, de Montjoye and Schweitzer, 2019, p. 66[107]), or below-cost pricing (Khan, 2017, p. 791[25]).
  - Apply abuse of dominance prohibitions to firms that are not yet dominant, but could become dominant due to a tendency of a market to tip (Schweitzer et al., 2018, p. 2[108]).

Box 13. Interim measures in the French Autorité de la concurrence's Google case regarding Amadeus

In 2019, the French Autorité de la concurrence imposed interim measures on Google in response to a complaint it received from the directory service Amadeus. Amadeus used Google AdWords to advertise its services, but its AdWords accounts were suspended after Google determined that Amadeus had breached its advertising rules. Amadeus submitted a complaint to the Autorité de la concurrence, alleging that this termination constituted discriminatory conduct by a dominant firm (which is considered an infringement under French competition law).

The Autorité began an investigation into whether the severing of an established business relationship between Google and Amadeus constituted a discriminatory abuse of dominance. They observed in particular that the suspension by Google was sudden, without warning and did not seem justified by objective or transparent factors. The Autorité clarified that: "Google is free to determine its content policy, but that it must be sufficiently intelligible to economic stakeholders and be carried out in an objective, transparent and non-discriminatory manner so that all advertisers in the same sector are treated equally." Recognising the impact of the suspension on Amadeus' revenues, the Autorité ordered several interim measures, namely: clarifying Google advertisement rules; allowing customers to justify, remedy or request an explanation for suspensions; reviewing the decision to suspend Amadeus; and training Google Ads sales staff to help advise customers on rule compliance.

Source: Autorité de la concurrence Press Release: The Autorité de la concurrence has ordered interim measures against Google, 31 January 2019, https://www.autoritedelaconcurrence.fr/en/communiques-de-presse/31-january-2019-online-advertising-directory-enquiryservices-0.

Alternatives to abuse of dominance enforcement

Abuse of dominance enforcement cannot address every potential competition problem that may arise in digital markets. Further, there may be cases where an abuse of dominance theory of harm may apply, but alternative competition policy tools could address the concern more effectively. For example, merger review can prevent the emergence of market power that can later be abused, and indeed some particular digital sector merger risks have been identified. In particular, given the potential for disruption and for new entrants to rapidly transform markets, acquisitions by dominant firms of emerging competitors may require particular attention (see, for example, OECD (2020[109])).

In other cases, competition authorities may wish to make use of their advocacy powers, conducting market studies to tackle competition concerns in digital markets. Market studies take a more holistic perspective in identifying competition problems, including issues stemming from demand-side problems (e.g. limited consumer information, and behavioural biases), regulation and market participant conduct that may not qualify as an abuse of dominance. This could be an effective way for authorities to adopt a more structural, rather than conduct-focused, analysis of competition in markets (as advocated, for example, by Khan (2017[25])).Further, market studies can be an effective tool for addressing emerging competition problems, in other words seeking ways to promote competition before an abuse of dominance concern arises (OECD, 2020[110]). A

few jurisdictions also possess powers to impose remedies in the context of these exercises. For example, the European Commission has developed a proposal for a New Competition Tool that enables market investigations to address structural competition issues in markets.[47]

Several recent expert panel reports have gone further, and suggested the creation of new regulators to promote competition in digital markets. While such a regulator could incorporate competition as a primary mandate, and even be situated within a competition authority, the tools and approaches would be different. For instance, while competition authorities may find the monitoring and enforcement of complex behavioural remedies to be a challenge, a sector regulator could be better equipped to undertake this task with ex ante rules. Further, a regulator could be better equipped to incorporate alternative policy objectives that may be associated with the conduct of dominant firms, but which do not fit within an abuse of dominance framework. Competition authorities can play a useful role in the design of these frameworks to ensure they do not unnecessarily restrict competition or have adverse effects on competitive dynamics. A digital sector regulatory agency could address issues regarding:

- Specific rules for dominant platforms (or those that are "bottlenecks" or "gatekeepers"), such as rules relating to fairness, self-preferencing, market participant discrimination and interoperability (Stigler Committee on Digital Platforms, 2019, p. 90[4]). The European Commission's expert panel proposes applying these rules to platforms based on criteria such as revenue or user numbers

  (Crémer, de Montjoye and Schweitzer, 2019, pp. 49-54[107]). The UK's expert panel focuses on firms with "strategic market status" (Digital Competition Expert Panel, 2019, p. 58[49]).

- Measures to tackle demand-side competition issues that may entrench market power, for example, by establishing data portability rules, or data trustees to advocate for users in terms of data usage preferences (Competition Law 4.0 Commission, 2019, p. 37[106]).

Conclusion

Digital markets pose a fundamental challenge for abuse of dominance concepts. If competition authorities are unable to apply these frameworks to digital business models, it may lead to questions about the broader relevance of abuse of dominance cases as a competition enforcement tool. As a result, some have called for more extensive enforcement in this area. Conversely, aggressive enforcement that is not founded in economic theories of harm, or which does not

address the risk of over-enforcement, may end up harming the consumers it was meant to protect, and undermine support for competition enforcement more generally. To balance these risks, it seems that both (1) an openness to abuse of dominance theories of harm, and (2) great care in selecting which cases to bring, are needed.

Different jurisdictions make different assessments of where the balance of under- and over-enforcement risks lies. These assessments cannot be separated from the underlying legislative, historical, and philosophical context of competition law in each jurisdiction. They may also be updated in response to expost assessments of past interventions, evidence about trends in market power. However, there are areas of convergence in terms of the need for effects-based analysis in most cases, and the need to avoid action that creates disincentives for innovation. While this paper identifies some new theories of harm that have been proposed in digital markets, in most cases they can be brought back into the context of established theories that have been applied for some time. Thus, while the unique combination of characteristics in digital markets can require some adaptation, and may raise the stakes for abuse of dominance cases, they do not require a fundamental rethink of abuse of dominance theories.

At the same time, there are cases in which alternative competition policy tools could be either more justified, more timely, or more resource-efficient. Competition authorities may wish to advocate for the introduction of sector-specific regulatory frameworks, particularly when the alternative is stretching abuse of dominance theories to address competition problems to which they are not well suited, or when the remedies would require detailed rules regarding access to a difficult-to-define input. Thus, competition authorities have many options, and abuse of dominance cases can be a helpful tool, but not a multipurpose tool.

Going forward, competition authorities seeking to address abuses of dominance in digital markets would benefit from deeper international co-operation, given the international scope of many

digital firms. Despite the differences in legislative frameworks and historical context, there remain significant commonalities in terms of the concerns being identified and the economic analysis underpinning them. With respect to this analysis, there remain significant opportunities for the development of new methodologies that help authorities assess the unique circumstances in digital markets (for example, with respect to forced free riding), and identify clearer conditions in which harm will emerge.

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