

International Competition Network (ICN) Topics on Assessment of Dominance in Digital Markets

This document considers some of the tools competition agencies can utilize to assess market power in digital markets. It aims at providing a discussion on the initial experience and related thinking of agencies which have been dealing with the novel market realities of digital markets.

This document focusses on two main aspects of the assessment of dominance: (1) the analysis and interpretation of market shares as indirect proof of market power, and (2) the analysis of barriers to entry and expansion. Market shares are one of the typical metrics used by agencies to assess a firm's market power. In many jurisdictions, a determination of market shares is also a required element for assessing dominance. Likewise, in evaluating a firm's market power, agencies typically assess whether expansion by existing competitors, or entry by potential competitors, would prevent that firm from exercising its market power. As part of this assessment, agencies examine various barriers that affect whether entry or expansion is timely, likely, and sufficient to constrain the firm's market power¹.

This document does not discuss two other aspects of importance to assessing dominance. First, it does not discuss the definition of relevant markets in the digital sector. This is often a central aspect of assessing dominance, which is described in general terms in Chapter 3 of the UCWG Workbook, Assessment of Dominance². In many instances, the definition of the relevant market may inform how best to measure market shares in a particular case³. Second, it does not discuss assessing dominance through direct evidence of market power⁴. Depending on the relevant laws in a jurisdiction, an agency may prefer to establish dominance based on direct elements, rather than using proxies based on the market structure.

Digital markets may have different characteristics that could affect market share analysis and evaluation of entry and expansion barriers. Many digital services link users or diverse groups of users (also called "sides") together, often resulting in network effects. These network effects may then give rise to complex pricing dynamics, including offering zero-price (or negative-price) services⁵ to one user group to attract demand by another user group. For example, because a news magazine with a high readership could be more attractive to advertisers, an online news publisher may provide readers zero- or reduced-price access to news content to increase demand by (and revenue from) advertisers.

The competitive strategy and resulting price structure adopted may differ among digital businesses offering similar services. For instance, depending on the characteristics of their respective groups of users and on the direct and indirect network effects they generate, one digital business may choose to charge a group of users (newspaper readers for instance)

¹ Additional relevant factors to assess market power may include, *inter alia*, buyer power, access to upstream/downstream markets, financial resources of the investigated undertaking. See ICN/UCWG, *Dominance/Substantial Market Power Analysis Pursuant to Unilateral Conduct Laws*, §8.

² See Unilateral conduct workbook, chapter 3: Assessment of Dominance, pp.71-8, available at https://www.internationalcompetitionnetwork.org/wp-content/uploads/2018/07/UCWG_UCW_Ch3.pdf.

³ The calculation of market shares depends on the correct definition of an antitrust market. The presence of firms operating under different business models in the same market may further complicate the computation and interpretation of market shares. This chapter will not repeat the principles of relevant market definition in digital sectors, but they are often critical for the calculation of market shares. See, for instance, J.U. Franck and M. Peitz, *Market definition and Market Power in the Platform Economy*, CERRE Report, May 2019, p.81 or OECD, *Rethinking Antitrust Tools for Multi-Sided Platforms*, 2018.

⁴ Where available, agencies can offer direct proof of market power. See Unilateral Conduct Workbook, Ch. 3, Assessment of Dominance, at ¶16 As the Cremer, de Montjoye and Schweitzer report puts it, "*in digital markets, less emphasis should be put on the market definition part of the analysis, and more importance attributed to the theories of harm and identification of anti-competitive strategies*". Indeed, constraints that a platform imposes upon its users can be an indicator of that platform's market power. For instance, a platform imposing exclusivity clauses on its users or reducing the quality of its services can be indicative of market power, especially when that conduct may diminish the user experience and the attractiveness of the platform.

⁵ Throughout this document, use of the term "zero-price services" should also be understood to include negative-price services.

while another may opt to offer its services at a zero price to this same group of users. Such network effects may affect both the analysis and interpretation of market shares, as well as the analysis of entry barriers.

Platforms and Network Effects

The supply of digital services may be single- or multi-sided. A standard online direct messenger service only enabling end users to communicate with one another (but not with business users) is an example of a single-sided platform⁶, as it serves only one group of users. By contrast, multi-sided platforms serve two or more user groups that interact with one another. Examples of multi-sided platforms include online news publishers, which serve advertisers and readers; online marketplaces, which serve sellers and buyers; and online hotel booking platforms, which serve hotels and travellers. Similarly, some suppliers of a given product may be single-sided (for instance, a firm selling its own products on the internet) while some others may be multi-sided (for instance, a digital marketplace linking buyers and sellers when selling some products to the consumers while simultaneously selling sales services to the sellers of the product).

Digital platforms facilitate interactions between users. As such, they give rise to network effects of varying importance. A platform's value to a user will vary depending on the other users connected to the platform.

A single-sided platform typically gives rise to "direct" network effects. In this case, the value of the service increases with the number of other users connected to the service.

Example 1: Consider a standard messaging service with a large user base. The fact that end users of that messaging service can connect to and chat with a large number of other end users generally makes the service more valuable and attractive for its users when compared to a messaging service which has fewer users.

Multi-sided platforms may also give rise to direct network effects but a more specific feature is often the presence of "indirect" network effects, where user demand on one side (i.e., by one user group) affects the value of the platform to users on the other side (i.e., to another group of users). Indirect network effects may be bi-directional (e.g., they are significant and positive between all groups of users) or uni-directional (e.g., they are positive from one group to the other and negative or insignificant in the opposite direction).

Example 2: An app store on a mobile ecosystem is typically more valuable to its users when it offers a large and diverse selection of apps, all else equal. Similarly, a mobile ecosystem with a larger number of users is more attractive for app developers. There are bi-directional effects for both groups of users of the app store, as the store is more attractive when there are more users or developers on the other side.

Example 3: Hotel booking platforms also generate bi-directional indirect network effects as the value of a platform for hotels typically increases with the number of end users of the platform, and the value of the platform for end users typically increases with the number of hotels on the platform.

Example 4: By contrast, an advertising-supported platform such as an online news service may generate asymmetric or unilateral indirect network effects. All else equal, the greater the audience of an online news service, the greater the demand for advertising to reach that audience. On the other hand, readers might dislike or be

⁶ To some, the term "platform" specifically designates a multi-sided supplier of services. This document uses the term "platform" more broadly to designate suppliers that facilitate interactions either between different user groups, as well as between users within the same group.

indifferent towards advertising and thus the more advertising on the platform, the less appealing the platform might be for readers, all other things equal.

Digital platforms may also experience multi-homing by users on either side of the platform,⁷ and/or scale and scope economies (these concepts will be discussed in Chapter 2). Digital platforms may also rely heavily on data, either as an input for the supply of other goods or services or as an output to their activity. Again, these characteristics are likely to influence market share calculation and interpretation as well as the analysis of entry and expansion barriers.

Chapter 1 will discuss different metrics for estimating market shares. It will consider how market share assessment is affected by network effects, differentiated business models, zero prices and multi-homing. It will also discuss the use of shares when dealing with markets where the firms under investigation are selling data and markets in which data is an important input in the production of goods and services by the firms under investigation. Finally, it will discuss various sources of information that may be used in order to assess market shares or factors likely to affect their calculation and interpretation.

In evaluating the existence of dominance/substantial market power, agencies typically assess whether expansion by existing competitors or entry by potential competitors would prevent the exercise of market power. While not unique to digital markets, some categories of barriers to entry and expansion have been found frequently by agencies in their investigations into digital markets. They include network effects, economies of scale and scope, data-driven advantages, switching costs and behavioural biases. **Chapter 2** will discuss how these market features, which are often interconnected, may constitute barriers to entry and expansion in digital markets. The types of evidence agencies have looked for in their investigations of digital markets will also be discussed.

Chapter 1 – Market Shares

There is consensus amongst competition authorities and jurisdictions that market shares can provide a useful indication that a firm has substantial market power⁸.

This chapter considers how certain characteristics of digital platforms may influence the calculation and interpretation of market shares. Section 1 discusses various market share metrics that may be calculated. Section 2 discusses the consideration of multi-homing and differentiated business models, such as zero-pricing. Section 3 will discuss how market share analysis can be done for markets where firms under investigation are selling data and for markets where firms under investigation consider data as an important input into their production process. Section 4 will present sources of information and evidence gathering relevant to market shares.

1. Calculating Market Shares of Digital Platforms

Revenue Shares

⁷ For instance, a business may utilize several competing platforms for the same purpose (e.g., hotels being present on several hotel booking platforms), because consumers are using different booking platforms to search for a hotel room. In contrast, single-homing corresponds to the use of a single platform for a given purpose.

⁸ See Report on the results of the ICN survey on dominance/substantial market power in digital markets of July 2020, available at <https://www.internationalcompetitionnetwork.org/wp-content/uploads/2020/07/UCWG-Report-on-dominance-in-digital-markets.pdf>. Of course, as noted in the above-mentioned Unilateral conduct workbook, “a conclusion that dominance exists should not be reached based on market shares alone” (§51) as barriers to entry and expansion as well as other additional factors should also be taken into account.

In the case of a single-sided platform, such as a messaging platform that connects users with one another and charges a fee to access the platform's services, an agency might calculate a firm's revenue share relative to all revenue earned by all firms offering a service that would fall within the relevant market.

In the case of a multi-sided platform⁹, revenue may be generated by users on one or both sides of the platform. As with single-sided platforms, agencies might calculate market shares with respect to the services offered on each side using revenues generated by that side relative to total revenues in the relevant market (which includes revenues generated on that side from all multi-sided platforms and, if relevant, revenues from single-sided platforms such as traditional brick-and-mortar firms).

However, in the presence of significant indirect network effects, revenue generated on either side of the platform will itself depend in part on the pricing structure adopted by the platform on both sides of the platform (i.e., on the level of fees for each group of users), which may differ across platforms offering similar goods or services to users. For example, low prices and small revenues on one side of the platform may be made up for by high prices and high revenues on the other side of the platform). Looking at the side with low revenues may lead one to believe that the platform is not dominant, but looking at the side with high revenues may lead one to believe that the platform is dominant. It may then make sense in some instances to interpret the revenue market shares of a platform on a given side considering the indirect network effects and the pricing structure of that platform. When the relevant market includes the various sides of the platform under investigation, it makes sense to calculate a share of total revenue earned by the platform relative to other platforms competing in the relevant market, provided these platforms offer sufficiently similar goods or services to the same user groups¹⁰. In other cases, market shares can be computed separately for each side, but the assessment of market power may factor in both sides. Finally, as a complement or perhaps even as an alternative, user shares or shares based on usage intensity may be useful to assess a firm's competitive strength, particularly so when revenue shares do so imperfectly.

Example 5: Consider a platform, P1, that posts video content, and that charges viewers a flat annual fee to access the content and advertisers a per-impression fee for advertising on the platform. Suppose the only other platform that posts video content and serves viewers and advertisers, P2, gives viewers zero-price access to the content but charges advertisers a higher per-impression fee than P1. On the viewer side, P1 will have a 100 percent revenue share and P2 a zero percent revenue share, which may not reflect the competitive pressure P2 will exert on P1. On the advertiser side, revenue shares will be split between P1 and P2, with P2 potentially enjoying a higher share on this side thanks to its higher advertising fees (depending on the price elasticity of the advertisers' demand). Yet, despite its lower market share on the advertising side, P1 may still be a significant competitor, if it attracts sufficient viewers despite its fee on the viewers' side. As this example shows, calculating revenue shares on a given side of the platform may produce shares that do not accurately represent actual market relevance/usage for users on that side. Of course, the analysis must be done on a case-by-case basis. Platforms' choices regarding pricing structure may reflect substantial differences in the underlying products' relative quality and attractiveness.

User Shares and Shares Based on Usage Intensity

⁹ It is important to keep in mind that multi-sided platforms may compete with single-sided platforms, for instance when a supplier competes with the marketplace on which his products are displayed. This issue is specifically addressed below, in the section "Market shares when platforms have different business models".

¹⁰ As a complement or as an alternative in case total fees are not available, market shares in total sales (merchandise value) could also be indicative of the platforms' shares provided neither the level of fees, nor the value of sales are sufficiently similar between platforms.

As an alternative or complement to revenue shares, an agency might calculate shares of users. In the case of a single-sided platform, an agency might calculate the user share of a firm relative to all users of the goods or services offered by all firms in the relevant market¹¹. In the case of a multi-sided platform, an agency may calculate the share of users of a firm on one side of the platform relative to the total number of users in the relevant market.

There may be several ways to measure usage, including: **unique visitors** that meaningfully interacted with the platform or supplier (bought an item, watched a video, etc.¹²) within a predefined time-frame¹³; or **registered users** at a given point in time. However, counting the number of unique visitors may be difficult as it often involves the need to de-duplicate the number of users who are, for example, accessing the platform via multiple devices. One way to avoid the need for de-duplicating is to count registered users instead, which may also allow to exclude from the counting those users who only rarely use the platform. Under this approach, there is a risk of including registered inactive users. In certain situations, a simpler solution to measure user shares would be to count the **number of visits**. This approach does not suffer from the double-counting problems and may broadly reflect aggregate usage intensity.

However, these measures may not adequately reflect the range of **usage intensity**, for instance, if the time spent on the platform varies greatly among users. The choice of the best measure also often depends on what is most commercially relevant for the platforms. Shares based on number of users may become less useful if usage intensity differs significantly among users. In such situations, shares of transactions or other proxies of usage intensity may provide a better measure. Shares based on the number of queries, number of downloads, number of listed goods, number of transactions, number of pre-installations, or time spent on the platform may provide useful proxies for usage intensity.

Finally, depending on the market under consideration, some key users, for example popular restaurants on online food delivery platforms, can be particularly influential in attracting other users to some sides of the platform. Qualitative aspects like this may have to be taken into account to complement quantitative metrics of usage.

Shares Based on Transactions or Matches

An agency might also calculate the share of matches¹⁴ (or transactions¹⁵) relative to all matches (or transactions) made in the relevant market, as an alternative or complement to revenue shares, when platforms can observe transactions or matches. This can be particularly useful if some transactions are made outside the platforms but should be included in the relevant market. This will depend on how the relevant market is defined, see example 6 below.

Example 6: Consider two platforms, P1 and P2, that match dog sitters and dog owners. Each platform observes transactions on the platform and charges a 3 percent fee on the cost of every engagement of a sitter by an owner. With information about the number and value of transactions executed on the two platforms, an agency could calculate revenue shares earned by P1 and P2 for dog sitting transactions executed on each platform. An agency might also calculate shares based on the number of transactions executed on each platform, for instance if fees vary between the two platforms or if many transactions are concluded off-platforms.

¹¹ In rapidly growing markets, the share of potential users may be also considered.

¹² The definition of an active user will depend on the type of interactions that generate revenues for the platform, directly or indirectly.

¹³ The period should be long enough to capture each significant interaction between the users and the platform. For instance, if a transaction between the user and the platform occurs on a weekly basis, the number of unique visitors/active users should be calculated on a weekly basis.

¹⁴ Matches correspond to the pairing of for example consumers with suppliers via the platform.

¹⁵ Transactions may be measured by their number or value.

Complications may arise if owners and sitters can use the platform to identify potential counterparties but then execute their transactions off the platform, unobserved by anyone but the owner and sitter who enter into an agreement for dog sitting services. In that case, provided off-platform transactions are part of the same relevant market as platform transactions, shares of revenues or fees from transactions on the two platforms may not accurately indicate the degree of market power of P1 or P2. With information about transactions executed off the platform, one might be able to calculate shares of transactions/matches made relative to all transactions/matches made on and off the platforms. As a practical matter, it may be difficult to figure out which platform users execute transactions directly with one another, or to determine the number or value of transactions that are executed off the platform.

How to Choose Appropriate Metrics?

The different metrics discussed above may provide different insights into market power¹⁶. For example, in some cases, the number of transactions or revenue shares may represent usage intensity and market power better than user shares. This might be the case for a digital market where the number of users may be the same on competing platforms, but users predominantly use one platform to make sales or purchases, with the result that revenue or transaction shares will be large for one platform but small for the other platform even though user shares may be evenly split. When usage intensity differs across users, shares of revenues, transactions or other proxies of usage intensity, like time spent on the platform, may be more useful than user shares. Among these metrics, the choice of the best measure may depend on what is most commercially relevant for platforms. For instance, in the case of platforms selling advertising space on one of the sides, what matters to advertisers, such as the number of views or the time spent on the platform, may inform the choice of an appropriate metric to calculate market shares on the other side.¹⁷

Nevertheless, user shares can be useful to evaluate the market power possessed by large platforms through network effects. User shares may also be relevant to capture the competitive pressure which may be exerted on some relevant markets by zero-price services (as the revenue shares of these services will automatically be zero, at least while those services have a zero-price).

2. Accounting for Other Characteristics of Digital Platforms

Market Share Considerations in Zero-Price Markets

Zero prices are in no way indicative of the absence of competition. Defining relevant markets and calculating market shares in such markets are feasible if needed.

Zero-price markets require many of the same considerations that are made in the assessment of market power in positive-price markets. Market shares, whether for zero-price or positive-price goods or services, are generally calculated by using the best available indicators of firms' competitive significance. In positive-price markets, where the products offered by the firms are heterogeneous, revenue-based shares are generally used. Zero-price markets complicate the use of revenue shares because when (most) market participants choose to charge a price of zero, revenue shares calculated on the zero-price side may not always accurately reflect competitive realities¹⁸. Instead, other measures such as the number of users, transactions, or matches or other indicators of measuring usage intensity (e.g., time spent, impressions) may be used when calculating market shares.

¹⁶ Data availability may also dictate what is possible as regards the calculation of market shares.

¹⁷ Where platforms rely on advertising revenues to support a zero price service, that revenue may, under certain circumstances, provide a good metric of the value of attention being received in lieu of monetary payment, and thus a reasonable basis for determining market shares.

¹⁸ Depending on how the relevant market is defined, market shares may combine shares on both sides and thus cover the revenues made on the other side of the market.

Depending on the circumstances, some of these measures may be more indicative of competitive significance. For instance, if usage intensity reflects user heterogeneity, referring to the number of transactions or the time spent on the platform might better reflect the firm's competitive significance in the market and whether it is susceptible to hold market power. Various sources of evidence may have to be considered by agencies when assessing market shares and more broadly market power in zero-price markets.

Market Shares When Platforms Have Different Business Models

Variance in business models may reflect product differentiation and yet the products may be considered sufficiently substitutable to be in the same relevant market. Even with different business models, it may be possible to rely on some of the previously discussed metrics.

Example 7: Consider two platforms, P1 and P2, competing for the market of short-term rental housing, where both competitors connect landlords (the seller side) to tenants (the buyer side), using a matching platform. Assume P1 charges landlords a fixed percentage on the price for each reservation, while P2 only charges landlords a flat fee. Although both P1 and P2 have different business models (i.e., use different pricing schemes), using revenues as a proxy to assess market shares may be an appropriate method, as it accounts for differentiated business models.

Larger differences in business models may present bigger challenges for calculating market shares in assessing the market power of firms, or may reduce the relevance of certain types of market shares and/or the utility of market shares overall. Example 8 illustrates how different business models may disconnect revenue-based market shares from the competitive pressure that competing platforms exert on each other.

Example 8: Consider one media company, P1, which chooses to monetize its media content through digital advertising (charging nothing to end users) while another competing media company, P2, only charges a subscription fee to users. In such a context, a revenue-based market share on the media content side of the market might inappropriately ascribe no market share to P1, while such a company may still exercise a competitive constraint on P2.

In example 8 the revenue-based market shares calculated on the media content side may not tell the full story, depending on overall competitive conditions in the market. P1 might exert some competitive pressure on P2, yet such figures would suggest P2 has a 100% market share (provided there are no other competitors) on the media content side. Instead, it may be more appropriate, in the spirit of the discussion in the section on zero price markets, to calculate market shares based on usage, such as the number of users (such as subscribers) or the volume of usage (such as number of movies/shows viewed in the media app or time spent on the platform). In order to calculate usage market shares, usage data must be sufficiently similar in spite of the platforms' different business models.

Finally, revenue-based market shares should not be dismissed altogether. Depending on market circumstances, usage-based shares may not tell the full story. For example, if a firm is only able to attract users by offering an unsustainable small (maybe even zero) price, then usage-based shares may overstate its competitive significance. Moreover, when the relevant markets include the two sides of the platform, it may be possible to calculate a revenue-based market share by examining the overall platform revenue (that is revenue generated on both sides of the platform). However, in case each side of the platform belongs to a distinct relevant market, revenue-based shares including overall platform revenues may be less useful as those shares are not directly related to a relevant market.

Other differences in business models may also diminish the usefulness of standard revenue-based market shares¹⁹. Example 9 below illustrates how even properly calculated revenue shares may fail to reflect market power through a case in which a platform relies on a different source of revenue from its rivals.

Example 9: Consider a company, P1, that collects or buys raw user data, enriches the data (for instance, by combining raw user data from different sources) and raises revenues through sales of the enriched data to corporate customers which use the data as an input in the production of goods. Assume further that these customers compete against a vertically integrated company, P2, which collects or buys raw user data, enriches the data and uses the enriched data as an input in the production of its final goods. The revenue-based market shares of P1 may erroneously suggest that it has market power, as its market share does not reflect the competitive pressure that P2, which does not operate in the same market as P1, may indirectly exert on P1 through its direct competitive pressure on P1's customers. If P1 sets higher prices, P1's customers may pass on these prices to their own customers (for instance if data represents a large share of the costs associated with the production of the downstream product), which may then entail a decrease in demand for P1's customers and hence for P1's data. In this case, even if P2 is not included in the upstream market, an agency may wish to consider the indirect competitive constraint exerted by P2 on P1, most probably through a qualitative analysis that integrates downstream market shares.

Impact of Multi-homing on Market Share Assessment

Multi-homing refers to the choice of a platform user to use more than one competing platform to perform a given task (search for a restaurant for instance) while single-homing refers to the choice of a user to use only one platform for this same task. Multi-homing and single-homing are fundamentally the same practices as one encounters in non-digital markets. For example, a person may shop for clothing at multiple stores or only at a single large retailer. That person may also shop at one store for some types of clothes (shoes) and another for other types of clothes (tailored suits). Accordingly, assessing market shares across digital platforms can raise similar questions as in non-digital markets. For example, if one is considering a large clothing retailer market one would likely look to overall sales across all large clothing retailers and clothing stores. Or if the area of concern is a subset of clothing products, the enforcer might look at that limited set of sales. The same applies to digital platforms, where it is usually appropriate to look at the share of users using a platform overall or for specific features, depending on the issue.

An important element to take into account in the case of multi-homing users is that the denominator in the market shares should account for the fact that some users multi-home and count these users multiple times. Consider for instance two platforms, each with 60 active users, 30 of which multi-home. In this case, the 30 multi-homing users should be counted twice in the denominator as these multi-homing users use both platforms. Each platform's market share is then 50% ($= 60/(60+60)$) instead of 66% when multi-homing users are counted only once. One can also consider other ratios when measuring market power in the case of multi-homing, such as a penetration ratio, i.e., the proportion of the total number of users in the market that are present on the platform²⁰.

¹⁹ Very different business models may also reflect a low demand-side substitutability between platforms; these differentiated platforms may then belong to separate relevant markets.

²⁰ The penetration rate is defined as the number of users of a particular platform over the total number of users. Using the previous example, penetration rates are 66% (60/90) for each platform. Unlike market shares, penetration ratios do not add to 100%.

3. Market Shares in Data Markets and Activities Related to Data

Data can play a key role in the business model of digital platforms. That data itself may be relevant in assessing market power is not new, but its central role in the digital market is a distinctive characteristic.

Some digital platforms engage in the collection and/or transmission of data of different forms (e.g., data on web searches by users, data on websites visited by users, data on users themselves). When the firms under investigation sell data, agencies may delineate relevant data markets and calculate firms' market shares in these markets²¹.

Markets where data, considered either as an output or as an input, are important for the competitive process can exhibit characteristics which may need to be appropriately accounted for in any analysis of such markets and, in particular, in the calculation and assessment of market shares. These characteristics include:

- (i) *the non-rivalrous nature of data*: one firm collecting data may not in itself prevent other firms from collecting the same data.
- (ii) *data heterogeneity*: data may show substantial differences in type and quality.
- (iii) *input nature of data*: many firms use data as an input in the production of other products (as opposed to products generating sales revenues).
- (iv) *zero-price of a large part of the collected data*: some operators of OSs, app stores, websites or mobile apps developers allow digital firms to collect data for free on their systems/platforms and likewise individual users transmit their data in exchange for the use of some digital services.

Market Shares Based on Revenues from Traded Data

When the data of the undertakings under examination is traded at a positive (i.e., non-zero) price, the associated revenues can be used to calculate sellers' market shares. As in any relevant market for differentiated products, revenue-based market shares summarize firms' positions on the relevant market in a single metric – the monetary unit – and can be compared despite the heterogeneity in the quality and variety of the data. By contrast, other sales metrics, such as sold quantities, may suffer from the lack of comparability of quantities across heterogeneous products. Furthermore, data revenues may be more easily calculated than data quantities because the amount of data collected or held by a firm or by all firms in a given relevant market is not always easily available²².

While the calculation of such revenue-based market shares may not in itself cause any specific difficulty when data is traded at a positive price, the assessment of market shares may still raise some issues. This may be the case when the customers buying data are competing with data-intensive firms that only use data as an input in the production of other goods (see example 9 above). Another difficulty arises if some firms sell data which is substitutable with other data provided for free – in such cases, revenue-based market shares may be less informative. In both these cases, quantity-based data metrics may then be relevant, particularly when firms collect as much raw data as possible without regard to the characteristics and quality of the collected data.

Shares in Data When No Revenues are Directly Generated through Data Collection/Sales

²¹ The need to define data markets separate from the product markets for which the data are used may depend on the specific characteristics of each case, e.g. whether data is actually traded (as opposed to being used only as an input into the production of goods or services such as digital advertising services). Other potentially relevant aspects include whether the use of a web service in exchange for the transmission of personal data amounts to an economic exchange, or whether the competitive supply of some goods or services require access to certain types of untraded data.

²² Revenue figures may also integrate the value of the services that accompany the provision of the data, such as data analytics, data storage support and so on when those services are part of the relevant market.

In some cases, data is exchanged for free or it is exchanged simultaneously with another good/service sold at a positive price. A prominent example concerns data generated on advertising-financed websites. There, many websites employing this business model allow digital advertising operators to collect data on users' interactions with the sites either for free or in exchange for a particular service from the digital operator. The advertising operators then use the data to enable targeted ads and/or to track conversions, which increases the websites' revenues from selling advertising spaces to advertisers. Another example is digital services provided to end users in exchange for the right to collect personal data (which may then improve the platform's service through better recommendations, more targeted ads, etc.). Finally, advertising space on platforms is typically sold for targeted advertising based on data collected by the platform and its matching capabilities. In this case, data (or a use of this data) goes with the sale of the advertising space.

In these cases, no data is sold at a positive price. Hence, it may be difficult to proxy the economic value of the collected data or the buyer power of the advertising operators or of the digital service provided to end-users through data sales. In such cases, market power may be more appropriately measured by advertising operators' market shares on the advertising markets or, more generally, on any market in which the goods/services using the data are sold.

Yet, in some cases, considering the volume of data collected may be relevant for assessing the market power of a firm on the good/service markets in which this data is used.²³ Data collection shares, expressed in bytes, in the number of individuals covered by the data collection process or in another relevant quantitative metric, may for instance be helpful to assess the volume of data collected by a digital advertising operator as compared to its competitors. Of course, such a share in data collection presupposes an assessment of the kinds of data which can be considered as substitutable, not only in terms of data types but also in terms of advertising audiences.

A direct way to calculate such shares may be to assess the quantity of a specific kind of data held or collected by each firm, when it is available²⁴. Example 11 presents another possible way to assess the market coverage of data collection. Depending on the sector under investigation and the sources of data, there may be various quantitative or qualitative ways to assess the data advantage enjoyed by a firm. Any "quantitative" advantage in terms of the volume of data collected must be complemented with an assessment of the value (e.g. uniqueness, relevance, freshness, variety) of the data. Finally, in the circumstance where a firm's business gains a competitive advantage from having a broader set of data that it has collected from publicly available sources, such as websites, or from other third-party sources (apps in an app store, retailers on a platform) then it may be useful to evaluate the quantity of data it is able to gather and from how many sources when compared to its competitors.

Example 10: Consider platform P1 active in a market where the access to data may be a source of market power and where most of the relevant data can be collected solely or mostly on devices, operating systems, websites and apps, with limited substitutability of data sources. Shares in data collection may then be informative as to the data advantage P1 may have over its competitors. Assuming that no data is traded directly or that such transactions are marginal, the share of data sources²⁵ (if need be and if possible, weighted by their audience) on which P1 is allowed to collect data may constitute such evidence, particularly if this share is significantly larger than for competing platforms. This share could be obtained through public

²³ In addition to volume, it may be appropriate to consider qualitative aspects of the data collected.

²⁴ Market shares could be computed in terms of data collected on a given period (say a year) or in terms of data stocks, considering the mass of data that has been collected during previous periods. The choice between these two metrics depends on the speed at which data ages and becomes useless.

²⁵ The sum of the platforms' shares in data collection will typically differ from 100%. This sum may exceed 100% due to the non-rival nature of data. As such, these shares constitute penetration rates rather than shares.

statistics, internal documents or other evidence collected by the respective agency. P1 and its main competitors could also be asked to supply a list of data sources (devices, apps, websites, etc.) from which they collect data.

To sum up, when data is sold at a positive price, revenue-based market shares appear relevant. To account for different business models, quantity-based market shares may also be considered. When data is more a source of a possible competitive advantage rather than a good or service sold to customers, agencies may assess the volume of data collected by different firms, and thus quantity-based data shares may be calculated, either directly (in bytes) or indirectly, for instance through a weighted count of the data sources (for instance, websites and apps) from which these data are collected or another appropriate metric. Of course, such quantity-based shares have the usual limitations since they do not reflect differences in the quality of the collected data. When interpreting these shares, more qualitative aspects (such as the value, velocity and variety of the collected data) should also be taken into consideration.

4. Gathering Evidence for the Assessment of Market Shares and Other Relevant Aspects of Market Share Analysis

The data necessary to calculate market shares, most notably revenues but also quantity metrics, is usually generated through each firm's activity. Therefore, firms (whether the allegedly dominant firm or its competitors) are likely to be in possession of this data. Competition agencies may thus collect the required data through requests for information. In addition, firms' internal documents (memos, internal presentations) and external documents (annual reports to shareholders) may also contain important information regarding the firm's revenues and levels of activity.

Market data retrieved from consultants' or industry reports can also help by providing indications of plausible market size over which the market shares should be calculated. In some cases, the availability of market data may thus help to evaluate the market shares of the main competitors without having to collect the turnover (or any other metric) of all the fringe competitors in the market. Also, in some cases, market data may be disaggregated at the firm level, so that this market data may be compared against the figures provided by firms and those published by market consultancies.

As this document has explained, the extent of multi-homing and of indirect network effects may be important considerations when interpreting market shares. Documents from the allegedly dominant company and its competitors may provide information about the functioning of the market (such as switching costs, multi-homing, network effects, threats of entry, etc.), which can complement market shares for the purpose of assessing market power. The chapter on barriers to entry and expansion also discusses data sources for evaluating these factors.

Customer data may in some cases be particularly useful for agencies to evaluate or approximate market shares and/or multi-homing. In particular, in some markets, no market data may be available from consultancies, and the number of fringe competitors may be too high for all of them to be listed and surveyed. Questionnaires sent to all or to a representative sample of customers may then be helpful in identifying whether the allegedly dominant company actually has a high market share. The extent of multi-homing can also be assessed through carefully designed customer surveys.

Chapter 2 – Barriers to Entry and Expansion

This chapter will discuss some common, often interconnected, categories of barriers to entry and expansion²⁶ that have been identified by agencies in their investigations into dominance in digital markets. Section 1 will expand on the topic of network effects as they relate to entry barriers. Section 2 will discuss economies of scale and scope, while section 3 will outline data-driven advantages. Switching costs and behavioural biases will be described in section 4. The presence of entry barriers does not mean that a firm in the relevant market necessarily has market power or behaves in an anti-competitive manner. In fact, this paper focuses on existing barriers to entry as market characteristics relevant for the assessment of a firm's market power, rather than evaluating the effect of conduct on those barriers. While there are many types of entry barriers that can occur in digital markets, this paper focusses only on some of the most common ones.

The types of evidence agencies have sought in their investigations of digital markets are also similar to evidence sought when investigating other markets. These include evidence such as internal or public documents, financial information, and third-party views. However, the experiences of agencies to date in gathering evidence on digital markets provides insights into the practicalities of this task, and also what types of evidence agencies have found to be the most informative when examining digital markets. Based on this experience, a discussion of the types of evidence that agencies could gather for their assessment of entry barriers in digital markets, and the sources of this evidence, is presented in section 5.

1. Network Effects

As explained in the introduction, network effects, including indirect network effects, are a phenomenon often found in digital markets. While network effects are not unique to digital markets, they are often relevant for understanding the competitive dynamics of many digital services. These includes services like online search, social networks, messaging services, customer review sites, online marketplaces, operating systems, and app stores.

In a market characterised by strong network effects, entry by a competing platform can be difficult. This is because a new entrant may find it hard to persuade many users to switch, and as a result, those users will only interact with a much smaller group of other users on the new platform due to a lack of coordination between users. In other words, an entrant may need to persuade a critical mass of users to switch to their platform in order to be able to be competitive vis-à-vis established platforms. For example, a user would find a messaging app that has fewer users to communicate with less valuable. This may be exacerbated if all or most users tend to favour the status quo over switching to a new platform. While the example described above relates to direct network effects, the entry barriers can be even higher in markets that feature both direct and indirect network effects (as described below).

It is important to note that in some highly concentrated markets or platforms, congestion may affect the likelihood of entry, as example 11 illustrates. That is, at some point, positive network effects may turn negative if too many users are on a platform and it is seen as less valuable to users.

Example 11: From the point of view of a user, the larger the number of apps distributed by an app store the more valuable is the app store since it is more likely that the user will be able to find what he is looking for. However, if there are too many apps, users may not be able to easily find the apps they are looking for. In some cases, the presence of congestion can put a

²⁶ In this chapter, the term "entry barriers" will be used to designate both entry and expansion barriers. Barriers to entry are specific features of the market that give incumbent firms advantages over potential competitors by making it more difficult for new firms to enter a given market. The source of the barriers to entry can be structural, strategic or regulatory (see Unilateral conduct workbook, chapter 3: Assessment of Dominance, pp.25-33, available at https://www.internationalcompetitionnetwork.org/wp-content/uploads/2018/07/UCWG_UCW_Ch3.pdf).

limit on network effects and may mean that entry barriers are not as high or as insurmountable for competitors. The negative effects of congestion can be overcome by better search and selection possibilities in the app store.

Factors Influencing the Level of Entry Barriers Created by Network Effects

Direct Versus Indirect Network Effects

The strength of entry barriers in a market from network effects depends in part upon the type(s) of network effects present. An entrant to a one-sided market featuring direct network effects faces only one user group that must be convinced to switch to its new service. In a multi-sided market featuring bi-directional indirect network effects, the new entrant faces an extra barrier – the readiness of a group of users to switch to a new platform depends on the readiness of the group of users on the other side of the platform to switch and vice versa. For example, a new digital marketplace would have to attract new customers with the presence of attractive sellers and vice versa.

Single-homing Versus Multi-homing

Entry barriers due to network effects may be higher when users single-home. However, the presence of multi-homing does not by itself indicate that competition is more intense. For example, multi-homing could be an indicator of complementarity where services are differentiated, or users could use one platform as the primary choice due to habit or familiarity. In addition, the relationship between single or multi-homing and consumer switching is discussed further in the section on switching costs and behavioural biases.

Product and Strategic Differentiation

The entry barriers resulting from network effects may in specific circumstances be more easily overcome when potential entrants are able to differentiate their goods and services to cater to distinctive user preferences. Where users of the incumbent platform are more heterogeneous, the possibilities for entrants to enter the market with a specific or “niche” good or service better suited to the specific needs of a subgroup of users are greater. Such specific user groups may be more inclined to switch concurrently to a new provider as they attach more value to interacting with members of their specific group compared to interacting with the larger, more general user base of the platform (see example 13 on product differentiation)²⁷. This type of “niche” entry strategy will only overcome the entry barriers resulting from network effects if the niche entry facilitates subsequent entry in the larger more general product category or if the niche entry shifts demand to a new market that eventually replaces the existing product category (disruptive innovation).

Example 12: Online dating apps provide a mechanism for people to find others who are also interested in finding a romantic relationship. Online dating apps may cater to a broad range of characteristics (sexual orientation, religious affiliation, age, special interests, etc.). Since each of these characteristics may be a primary basis that people use to screen for suitable romantic partners, it may be feasible for several specialized apps catering to particular subgroups to emerge successfully alongside dating apps catering to a more general audience.

2. Economies of Scale and Economies of Scope

Economies of Scale in Digital Markets

Economies of scale occur where the average or per unit cost of production decreases as a firm increases its level of output. Economies of scale can occur by spreading fixed costs of

²⁷ See for instance: CERRE, Market definition and market power in the platform economy, May 2019, p. 77.

production over more output, or through lower average variable costs with increased production (resulting from being able to negotiate lower input costs at greater scale for instance). These benefits are also common in non-digital industries. As in those industries, economies of scale can act as a barrier to entry.

A key feature of digital markets is that firms typically have low variable costs combined with high fixed costs. Often, these high fixed costs are sunk, in that there is limited ability to recover those costs, at least until the firm can attract consumers. These sunk costs make entry commercially riskier than it otherwise would be. The challenge may be exacerbated in two-sided digital platforms where an entrant may need to generate sufficient revenue from users on one side of a platform to cover the costs of also providing services to the “zero price” side of the platform. As a result, an incumbent platform will likely have a cost advantage (and often a corresponding data benefit, discussed later) over smaller competitors (or entrants). A firm that can provide a product at a lower cost (or better quality with the same cost) to consumers will likely attract even more buyers, reinforcing the firm’s advantage over its competitors and exacerbating the challenges to entry.

Example 13: Search engines face significant fixed costs to develop and refine their algorithm and crawl the web to create and maintain a broad and up-to-date search index. The subsequent costs of providing specific search results to users are, relatively speaking, modest. This results in strong economies of scale and may make it difficult for a smaller search engine to enter or expand.

Economies of Scope in Digital Markets

Entry and expansion can be more difficult in markets involving economies of scope. Economies of scope provide firms that produce or offer a number of products with a competitive advantage over firms that produce or offer only one or a few of these products, often because the products are related, for example if users tend to consume them at the same time. Economies of scope in production arise if the cost of producing a second product is lower if the firm already produces the first product. In circumstances where economies of scope are significant, new entrants will usually have to produce or offer a range of products to be successful, making entry more costly and potentially riskier. Platforms that benefit from economies of scope may be able to attract existing users to a product in an adjacent market at lower cost than a new entrant, leverage a dominant position from a market to another, or exploit data advantages in one or more markets.

In digital markets, economies of scope can be relevant in particular due to the presence of three connected factors: software and other shareable inputs, customer relationships and user data. Digital markets are often characterised by high fixed costs, such as investing in programming software or other infrastructure. In some cases, such infrastructure – a type of “shareable input” – may be used to launch new goods and services without additional significant investment. The existing network of customer relationships may increase a digital platform’s ability to attract existing users to a good or service in a new or adjacent market at lower cost. Finally, user data collected as part of the provision of an existing good or service (discussed further in the next section) may be used by platforms to produce new goods or services. These three factors, potentially combined with each other or with other factors, may create economies of scope for firms in digital markets, thereby reducing their per-unit costs.

Furthermore, these economies of scope may favour the development of ecosystems. Ecosystems often offer multiple complementary goods or services that may make it difficult for potential rivals to match their offerings without incurring significant costs. That is, successful entry into one market could require entry into several others to compete effectively.

This increases the investment necessary to enter or expand and requires the entrant to confront additional obstacles.

Example 14: Consider platform P1 that has developed an instant messaging service that became the market leader over other similar services due to its functionality and ease of use. In part due to network effects, P1 built a large user base. P1 then expanded into adjacent markets including social media, payments, gaming and streaming by making these services available through its messaging service. Because of its instant messaging user base, it was less costly for P1 to expand into these new areas than it would have been for a new firm to enter any one of these adjacent markets. For the incumbent, the cost of obtaining new customers for its services overall is lower than it would be for each service standing alone, so they benefit from economies of scope.

An ecosystem can also work as a distribution channel for other services, making it more difficult for entrants that do not have access to comparable distribution channels to compete. This is true in general for any “input” controlled by a dominant firm that is crucial to compete downstream. At the same time, an ecosystem may reduce barriers to entry into new markets for the firm that controls the ecosystem. Being present in an adjacent market allows the platform to become known by users, to gather data on them, to share fixed costs and use other assets to help its entry.

3. Data-driven Advantages

Data may be an important factor for agencies to consider when assessing dominance/substantial market power in digital markets due to the increasing scale and scope of data collection and importance of data for digital firms at all levels of the value chain. The role of data may be a particularly important consideration when assessing digital services that are offered to consumers at a zero monetary cost. This is a common business model for digital platforms, which monetize their services through targeted advertising that utilises data collected from their consumer-facing services. However, the importance of data is not unique to zero-price services, and can also be a significant factor for assessing competition involving fee based platforms. Data-driven advantages can be more disruptive in combination with scale and scope effects, and network effects.

The value of data is derived from the information and knowledge that can be extracted from the data. The value of data is also context dependent. In each market, it is important for agencies to understand whether and how data may be valuable to digital firms. Agencies can determine the value of data by considering the characteristics of data that have been identified as contributing to its value such as volume, velocity, variety and veracity²⁸. The value of data is also determined by complementary elements, such as technology infrastructure and the ability to analyse and synthesise data.

Given the range of factors that can contribute to the value of data, there are many possible forms of data-driven advantages that may result in barriers to entry, for example:

- *Access to unique data:* unique access points and gateways to unique data (data for which there is no functional equivalent), may lead to situations in which the data cannot be easily replicated or where duplication may be uneconomic or unfeasible. For example, this might be the case where the data are created as the result of distinct user interactions with a digital platform, such as user interactions on a social network or for online purchases, and where duplication is difficult and costly. When this unique data is important for an entrant to compete, its inability to access that data may constitute a barrier to entry.

²⁸ Daniel L. Rubinfeld & Michal S. Gal, *Access Barriers to Big Data*, 59 ARIZ. L. REV. 339, p 346 (2017).

- *Economies of scale and scope*: scale and scope economies relating to data can arise in several ways. Economies of scale can arise from the fixed costs of creating devices and methods for data collection, or the economies of scale related to providing the services that generate user data. Economies of scope may arise if a firm offers multiple services that collect data, and where linking these data can yield insights that enable firms to further improve their services. For example, the accumulation of data from multiple sources may give a firm the ability to offer tailored and complementary services. This may result in costs for users to switch outside of a proprietary ecosystem if, for example, an entrant is unable to offer tailored services due to the absence of data.
- *Speed of collection*: in markets where data can be collected and utilised rapidly, or even in real time, data may be rendered obsolete in a relatively short period of time. As such, the advantages of firms who are in a superior position to observe consumer behaviour may be reinforced in contexts where the value of data is tied to a consumer's current situation. This implies that, for example, if an entrant is unable to process large volumes of data on user geographic location in real time, it may face difficulties when assessing traffic information in a mapping application.
- *Data-driven network effects*: it is possible for network effects, or feedback loops, to be associated with data. For example, firms with a larger customer base may have a relatively larger dataset that they can use to improve the quality of the service (for instance, by creating better algorithms). This may enable the firm to attract even more customers to their service (i.e., a direct network effect) and thus collect even more data, as illustrated in example 16. An entrant may not be able to benefit from these network effects and will thus face difficulties in competing in equal terms with larger platforms.

Example 15: Consider platform P1 that supplies a search engine service and has a significant number of active users. The quality of this service is determined by whether users perceive the search results to be relevant to their search query. P1 can collect voluminous data on its users' search queries and behaviour, which it uses to improve the quality of the search results. Continuous data collection also enables P1 to adjust its rankings over time as users' preferences change. An entrant platform wanting to compete with P1 would face difficulties in attracting users given that it would lack the same volume of data, contrary to P1 which, being regarded by users as having the most relevant results for a search query, would more easily attract new users to its search engine.

The data on users' behaviour could also be used by P1 to improve the targeting of advertising. For example, data on the relevance of search results (by analysing which results are clicked on by users) could be used by P1 to help advertisers place advertisements that are more likely to be clicked by the user. This can increase the advertising revenue P1 receives, which can be used by P1 to help improve its search services, making it even more difficult for an entrant to attract users.

For an assessment of dominance and/or substantial market power, it is important to assess whether data-driven advantages contribute to entry barriers. For example, agencies may want to investigate whether the viability of entry and expansion depends on firms reaching a minimum size in terms of volume of relevant data points. To assess whether economies of scope act as a barrier, agencies may also want to investigate whether entry and expansion is viable for firms which lack access to a particularly important set of data held by incumbent firms.

Agencies may also find it useful to consider whether there are adequate substitutes to the data in question, even if these alternatives are generated from different sources and have different breadth and depth. This could also involve assessing whether new entrants, or firms in related

markets, are able to overcome the incumbents' data-driven advantages without access to the same or similar data held by the incumbents, for example by creating better analytical tools or by offering innovative new features to users.

4. Switching Costs and Behavioural Biases

Switching costs may play an important role in the assessment of market power. When it is difficult or costly for consumers to switch to an alternative provider of a similar service, the firm with existing customer relationships may be able to exercise market power. Similarly, switching costs can exist on other sides of a multi-sided market, for example among sellers who use a shopping platform to reach consumers or advertisers that use a platform to reach consumers. The difficulty of switching to an alternative can also constitute a barrier to entry in any market, including digital markets. When switching is time consuming, costly, or involves substantial effort, a competitor (or potential competitor) may have difficulty entering or expanding the number of users of its service. Because of the network effects typically involved with platforms, switching costs have the potential to prevent the competitor from successfully entering or expanding to a viable scale, and act as a competitive constraint on the incumbent platform. This section focuses on switching costs for consumers, but agencies should also evaluate the switching costs for users on other sides of multi-sided platforms when the conduct may affect competition on that side of the market.

Although a number of consumer-oriented platforms operate using a business model that involves a zero-price on the consumer side (with revenues paid for by another user group, such as advertisers), switching from one zero-price platform to another may still involve costs for consumers. Thus, even though the consumer faces no price "increase" from changing to another platform (or expanding usage of the new platform while reducing usage of the first), the consumer may bear costs in terms of the time and effort it takes to switch. For example, depending on the platform, the consumer may have information or other data stored with the first platform that would be desirable, but time consuming, to move to or duplicate on a new platform. This could take the form of photographs the user wishes to be able to share on a social media site or data about athletic accomplishments on a fitness tracking website, for example. Similarly, a user may have stored preferences, such as types of restaurants for a food-searching app (see example 17) or destinations for a ride-sharing app. There may also exist limitations to the portability of data or interoperability of services that raise the costs to consumers of using different providers for complementary goods and services²⁹. As part of the evaluation of entry barriers, an agency should investigate whether switching costs are likely to limit, discourage, or make it impractical for a consumer to switch to an alternative platform service. Evidence about consumer past behaviour might be particularly helpful in performing that analysis.

Example 16: Consider platform P1 that offers food delivery services from restaurants. Platform P2 also offers such services. P1's app allows users to store favourite restaurants, as well as favourite menu items, and includes a "quick reorder" feature for favourite or repeat orders (for example, a large pepperoni pizza). P2 has a similar feature on its app and allows users to add "favourite" restaurants and orders. Data regarding a consumer's preferences are viewable by a user in the "Preferences" portion of P1's app but information about favourites cannot be exported to a data file or downloaded. An agency could investigate how important this data is to the user and whether the time and effort required to reproduce it in a new app limits the likelihood of consumers switching from P1 to P2.

²⁹ For example, a platform may offer a "suite" of products or "ecosystem" for which the various component apps have beneficial integrations, such as a group of productivity tools (email, chat, calendar, contacts). Limitations on the interoperability of some of these component apps with competing component apps (such as a calendar app from another platform) may make switching unattractive for consumers because of the reduction in functionality.

In addition, the ability of consumers to switch from one platform to another may be limited when a platform imposes restrictions on multi-homing. Product design, contractual restrictions, interoperability concerns, or other factors, may limit the ability of consumers to use more than one platform to obtain similar services³⁰. For example, a fitness tracker might be designed to limit the websites and apps to which the data may be uploaded, or music downloads may be encoded with digital rights management that prevents the music from being used with alternative music players. Limitations on multi-homing have the potential to increase switching costs because the user may need to “start from scratch” to have the new platform provide comparable functionality based on past usage or purchases. Using the examples above, the user may need to repurchase songs or may either need to recreate their fitness data or abandon past data. Agencies may consider evaluating whether there are multi-homing limitations that create or increase switching costs.

Related to switching costs are consumer behaviour and “stickiness”. As a practical matter, even if switching costs are low, consumers may not switch to alternatives in response to a price increase or decrease in quality. For example, default settings can create stickiness. It is useful to assess how easy switching from the default is for consumers. For example, the ability to switch defaults may require downloads or navigation of complex menus. It is also worth considering actual behaviour of consumers. While users may be able to change default settings relatively easily, as a practical matter they may not opt to switch from the default. In some situations, users may lack awareness of the ability to switch to an alternative, or users may choose not to switch when they are reasonably satisfied with the current default. Alternatively, consumer inertia may mean that consumers stick with their initial choice solely because it was the first firm to provide a particular service (often called first-mover advantage).

5. Gathering Evidence for the Assessment of Entry Barriers

As part of an investigation into a firm’s market power, an agency is likely to need to gather evidence on barriers to entry. Such evidence can help to illuminate whether the types of barriers identified above exist, and if so, to what extent, in an effort to assess whether entry is likely, timely, and sufficient enough to make the exercise of market power unsustainable. The most suitable tool will depend on the agency’s powers and what in its experience is most effective in obtaining the desired information.

To inform an evaluation of barriers to entry, an agency may consider gathering information from both the allegedly dominant firm, as well as other market participants, including third parties, potential entrants, existing competitors, and customers. Customers may be individual consumers, as well as entities that may conduct business with the firms, such as advertisers or sellers of goods and services that use the platform to reach customers.

Information From the Allegedly Dominant Firm

Requests for information addressed to the firm under investigation or compulsory submission of information or documents may include: internal presentations for the launch of new policies, technological changes for goods or services, contracts with market players, or interviews to shed light on the platform’s cost structure. Both qualitative and quantitative information may help to show the degree of economies of scale and scope that exist, and whether the firm faces declining average costs as it expands its customer base or when it offers multiple services. These types of information may also assist in evaluating the degree of any network effects, for example, through internal assessments regarding the importance of the size of the network(s) for the platform’s success. In addition, information from the firm under investigation can help identify policies that increase switching costs, such as restrictions on multi-homing.

³⁰ Limits on multi-homing may also be present on other sides of a platform market, including technical or contractual limitations that limit using more than one platform to reach consumers. This chapter does not cover other restrictions that may have a similar effect, such as limitations on using competing “open” apps within a platform that can result in stickiness.

Documents from the firm may also help to identify whether and how the firm perceives competitive threats, or, alternatively, barriers to entry as described above. Documents may also show internal studies of how changes to platform design affect consumer behaviour (e.g., did the change lead consumers to use the platform more or less intensively). Finally, internal documents may discuss the importance of data and the advantages it provides to the firm under investigation.

Information From Potential or Failed Entrants and Competitors

Information from third parties can also illuminate the degree of barriers to entry. Potential entrants that have considered entry in the market, or are doing so, but failed to enter that market could provide relevant information. Interviews may help to understand the challenges potential entrants believe they face and how realistic it is to overcome those barriers. A firm that failed to enter the market could provide information on why they failed, showing the actual difficulty of entry, or at least allow an assessment of what level of effort (including access to data, other inputs and scale of users) is required to enter successfully.³¹ Information may show that the incumbent's good or service was sufficiently attractive, and consumers decided not to switch. Alternatively, assessment of the potential entrant's business acumen may suggest the firm's own limitations as the reason entry failed. Similarly, any firms that have exited the market could help inform an assessment of these barriers. Information from competitors may provide a useful basis for comparison or analogy about the types of barriers to entry that they observe. Documentary evidence to support the experiences shared in interviews have the potential to confirm (or undermine) any statements made orally.

Information gathered from firms that successfully entered, and existing competitors, can also be helpful and may provide different information than that provided by failed entrants. Information regarding the ease/difficulty of their entry, how much they have been able to expand in the time since then, and how the target firm reacted to this entry/expansion are good topics to focus on.

Another source of potentially relevant information are firms that offer services which are not substitutable for those of the firm under investigation, but which are related to them or are in adjacent markets. Understanding why such a firm may or may not consider entering the adjacent market could help inform the agency about potential barriers to entry.

Information About and From Users

Business users (e.g. sellers, goods or services providers, or advertisers) and end users may also be sources of useful information. This information may come in the form of actual past behaviour or from statements about potential future behaviour. Information from both these types of users may provide insights about their willingness and ability to switch to potential competitors. Such users may be able to provide information about the attractiveness of alternative platforms, including their ability to multi-home successfully. Such information can be gathered through evidence about past behaviour, interviews as well as submission of information and documents. Entry barriers may also be gauged by the kind of conditions imposed upon business users. In a competitive market, impositions of onerous conditions may lead to a shift towards competitor platforms. However, the lack of any such movement can be an indicator of the market power of a firm.

End users may also be able to provide information about their willingness to switch to alternative platforms. This can include information on whether, and if so, to what extent, direct or indirect network effects influence their willingness to switch to a competing platform. Alternatively, studies of end-user behaviour in the past may provide useful predicative value.

³¹ Although in some cases this information may be difficult to obtain as many failed entrants no longer exist, in many other cases firms remain active in other markets and could therefore still provide information on their failing to enter the market.

Gathering information from end users (or from an aggregator such as a consumer association) using carefully designed, non-biased surveys may be the most efficient way to get this information. Surveys can evaluate the circumstances and conditions in which users would or would not switch to a competitor, also allowing to infer any stickiness to the incumbent's services.