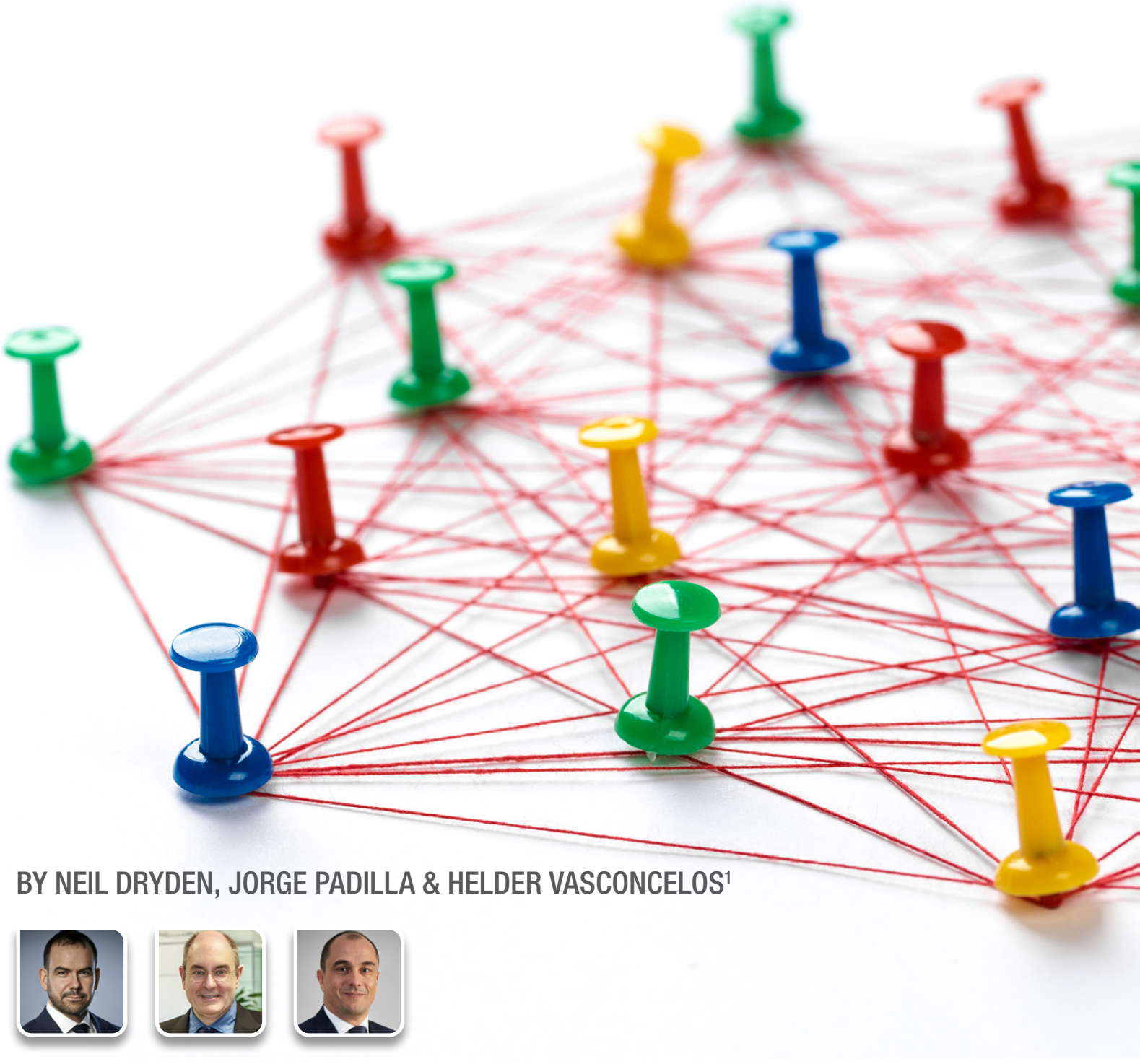
ON THE COMPETITIVE EFFECTS OF SINGLE-HOMING: THE CASE OF HYBRID MARKETPLACES



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I. INTRODUCTION

The growing digitalization of the economy has led to the emergence of new business models, based on multi-sided platforms, which have inspired a relatively recent, but rapidly expanding, strand of the economics literature on the economics of two-sided markets.[2]

This literature has given rise to many important challenges as far as competition policy enforcement is concerned. As several commentators have repeatedly highlighted,[3] the one-sided logic may be misleading in making inferences in two-sided markets. To correctly frame the competitive environment in multi-sided markets, it is therefore crucial to factor in the intrinsic characteristics of these markets as well as the associated economic context.

For example, due to the existence of network effects between different groups of market participants intermediated by online platforms, on the one hand, and of increasing returns to scale, on the other, these platforms typically work in markets which are prone to concentration, tipping to one or a few providers.[4] Nonetheless, as highlighted by Tirole (2019):[5]

> *That today's information-technology markets are highly concentrated is beyond dispute. In most cases, a single company dominates a given market. There is nothing abnormal about this, as users are prone to flocking to just one or two platforms, depending on the service.*

2 See, for instance, Evans, D.S., (2003), "The Antitrust Economics of Multi-Sided Platform Markets," *Yale Journal on Regulation*, Vol. 20, pp. 325-381, Caillaud, B. & Jullien, B., (2003), "Chicken & Egg: Competition Among Intermediation Service Providers," *RAND Journal of Economics*, Vol. 34, No. 2, pp. 309-328, Rochet, J.-C. & Tirole, J., (2003), "Platform Competition in Two-Sided Markets," *Journal of the European Economic Association*, Vol. 1, pp. 990-1029, Rochet, J.-C. & Tirole, J., (2006), "Two-Sided Markets: A Progress Report," *RAND Journal of Economics*, Vol. 37, No. 3, pp. 645-667, Armstrong, M., (2006), "Competition in Two-sided Markets," *RAND Journal of Economics*, Vol. 37, No. 3, pp. 668—691, and Armstrong, M., (2007), "Two-Sided Markets: Economic Theory and Policy Implications." In: Choi, J. P. (Ed.), *Recent Developments in Antitrust*, MIT Press: Cambridge, for seminal path-breaking references regarding the economics of multi-sided platforms. See also Jullien, B., (2012), "Two-Sided B2B Platforms," In: Peitz, M. & Waldfogel, J. (Ed.), *The Oxford Handbook of the Digital Economy*, Oxford University Press, providing a roadmap to this literature with a specific focus on B2B marketplaces.

3 See e.g. Wright, J. (2004), "One-Sided Logic in Two-Sided Markets," *Review of Network Economics*, vol. 3(1), pp. 44-64.

4 The online economy has been demonstrating a tendency towards winner-takes-all outcomes. As observed by Tirole, J., (2019), "Regulating the Disrupters," *Think Outside*, ING. ING Bank N.V. (available at https://think.ing.com/opinions/jean-tirole-regulating-the-disrupters), "by dint of network effects and economies of scale, the digital economy almost inexorably creates 'natural monopolies'." (p. 3). See also Section II in Jullien, B. & Sand-Zantman, W. (2019), "The Economics of Platforms: A Theory Guide for Competition Policy," Toulouse School of Economics, Digital Center Policy Papers series No.1, September 2019.

5 See Tirole (2019), *op. cit.*

The analysis developed in the scope of the application of competition law must then carefully take into consideration both the specificities of multi-sided markets and,[6] we add, the specific business model adopted by online platforms when competing in those markets. Otherwise, competition agencies and enforcers may run the risk of misusing traditional principles and, most importantly, of failing to capture the essence of competition in multi-sided markets as well as the correct identification of their potential anticompetitive problems.

A typical concern within competition assessments in two-sided markets relates to the fact that platforms can become "bottlenecks" or "gatekeepers" that provide exclusive access to single-homing users,[7] which may grant those platforms market power *vis-à-vis* agents on the other side(s) of the market wishing to interact with the single-homing users.

While not disputing that this is a legitimate concern, as the exclusive access to single-homing users by a dominant firm may strengthen its competitive advantage over its competitors, eventually giving rise to anticompetitive effects if used in an abusive manner, our claim is that dealing with single-homing consumers needs not be anticompetitive and, more precisely, that the final induced competitive effects are bound to depend on the business model of the (allegedly) dominant firm. More specifically, in this paper, we investigate in detail what are the likely competitive effects of single homing in the context of hybrid platform marketplaces, i.e. marketplaces run by vertically integrated platforms which operate also as resellers.

The remainder of this paper is organised as follows. In Section II we present the logic of the so called "competitive bottleneck," an economic concept which states that, in multi-sided markets, a platform may be granted (and exercise) significant market power whenever its end-users concentrate and single home. In Section III we present and discuss arguments in the extant economics literature regarding who benefits from single homing in platform competition. In Section IV we claim that even if consumers decide to single home when joining a hybrid-marketplace, this need not to give rise to anticompetitive behaviour by the online platform running the marketplace, as the nature of the induced competitive effects will critically depend, among other factors, on the specificities of the business model adopted by the platform. Finally, Section V presents some policy implications from our analysis and concludes.

II. THE LOGIC OF THE SO CALLED "COMPETITIVE BOTTLENECK" PROBLEM

One important factor to address when appraising competition in two-sided markets is the extent to which each side can use more than one platform.

There are many situations wherein users on one side join only one platform (single home) whereas users on the other market side join more than one platform (multi home). When this is the case, platforms are bottlenecks: users on the multi-homing side can only access single-homing users by joining the platform that grants exclusive access to those single-homing users.[8]

In this context, and according to the "competitive bottleneck" hypothesis,[9] multi-sided platforms will likely compete for the single-homing users, as by ensuring these agents participation they will then enjoy monopoly power over the multi-homing users with regards to granting access to their (exclusive) single-homing users. Put it another way, platforms will naturally compete intensively for the users belonging to the side of the market on which there is (high degree of) single-homing since, by so doing, they will be able to extract more rents from the multi-homing users interested in interacting with those single-homing users.

6 Along related lines, Tirole (2019), *op. cit.*, underlines that: "New guidelines for adapting competition policy to two-sided markets would require that both sides of the market be considered together, rather than analyzed independently, as competition authorities still sometimes do. This will require care and a new analytical approach." (p. 3).

7 An economic agent single homes if she uses only one platform in a particular industry and multi-homes if she uses several.

8 See e.g. OECD (2018), "Rethinking Antitrust Tools for Multi-Sided Platforms," OECD, Paris, available at www.oecd.org/competition/rethinking-antitrust-tools-for-multi-sided-platforms.htm.

9 Armstrong (2006), *op. cit.*, was probably the first who highlighted the importance of multi-homing for competition, creating the concept of "*competitive bottleneck*" in the context of (multi-sided) platform competition. See also Armstrong, M. & Wright, J., (2007), "Two-sided markets, competitive bottlenecks and exclusive contracts," *Economic Theory*, Vol. 32 (2), pp. 353-380.

Competition for single-homing users and monopoly power over multi-homing users can, therefore, give rise to biased pricing structures benefiting the single-homing side of the market,[10] as profits extracted from the multi-homing side might be used to compete aggressively for the single-homing side users,[11] that may end up paying zero, or even negative, prices.[12]

As Evans & Schmalensee (2017), point out, however:[13]

It is not clear how robust this finding is and how it interacts with other aspects of platform competition. Operating system providers, for example, typically charge users, who single home, and subsidize developers, who multi-home.

As we discuss in the next Section, some recent theoretical research has shown that Evans & Schmalensee's conjecture was right: the intuition behind the "competitive bottleneck" argument is not always correct, and the result may even be reversed.

In the analysis that follows, apart from presenting the recent important findings of the literature in this domain, we claim that the specific features which characterize the functioning of some hybrid marketplaces introduce key additional ingredients that should be carefully factored in when assessing the market power of a multi-sided platform eventually dealing with single-homing users on one market side.

III. WHO BENEFITS FROM SINGLE-HOMING IN PLATFORM COMPETITION?

Imagine a scenario in which there is a move from single-homing on both sides to a "competitive bottleneck," i.e. to a situation where one side, say side 1, keeps on single-homing whereas the other side, therefore side 2, wants to patronize both platforms.

By exploring the allocative effects of such a change from single- to multi-homing, a recent article by Belleflamme & Peitz (2019a) has challenged the conventional wisdom, according to which the possibility of multi-homing hurts users on the multi-homing side while benefitting the single-homing users on the other market side.[14] As the authors demonstrate, this is not always true, as the opposite may happen or, alternatively, both sides may benefit from such a movement.

The intuition is as follows. Let us first consider a two-sided single-homing environment (i.e. when both sides single-home). In this environment, if a user on one side wants to interact with a particular user on the other side, they both must be on the same platform. Hence, if a platform manages to poach a user (from either side) away from a competitor onto its site, this platform becomes more attractive to users on the other side, as more transaction partners become available on the platform's site and fewer partners are available at the competing platform's site. So, competition in each side of the market may be pretty intensive since an additional user on one side of the market brings others from the other side.

10 The price structure reflects the interlinked demands of the two groups of agents intermediated by a platform and the need to get both sides on board, thereby solving the well-known "chicken & egg" problem (see Caillaud & Jullien (2003), *op. cit.*). This then often results in complex pricing where the price to each group of consumers does not reflect the marginal cost of supplying them. As Armstrong (2006), *op. cit.*, points out, when two groups (say, 1 and 2) interact via one or more platforms, then "[i]f a member of group 1 exerts a large positive externality on each member of group 2, then group 1 will be targeted aggressively by platforms. In broad terms, and especially in competitive markets, it is group 1's benefit to the other group that determines group 1's price, not how much group 1 benefits from the presence of group 2." (pp. 668-669).

11 This effect, according to which higher revenue per user on one side of the market translates into lower prices on the other market side, is what is referred to as the 'waterbed effect' in the literature on the economics of telecommunications addressing the regulation of termination rates. See e.g. Armstrong, M. & Wright, J. (2009), "Mobile Call Termination," *The Economic Journal*, 119: 270-307.

12 As Armstrong (2006), *op. cit.*, describes it: "Here, if it wishes to interact with an agent on the single-homing side, the multi- homing side has no choice but to deal with that agent's chosen platform. Thus, platforms have monopoly power over providing access to their single-homing customers for the multihoming side. This monopoly power naturally leads to high prices being charged to the multihoming side, and there will be too few agents on this side being served from a social point of view [...]. By contrast, platforms do have to compete for the single-homing agents, and high profits generated from the multihoming side are to a large extent passed on to the single-homing side in the form of low prices (or even zero prices)." (pp. 669–670).

13 See Evans, D.S. & Schmalensee, R., (2017), "Multi-sided Platforms," In: Palgrave Macmillan (eds), *The New Palgrave Dictionary of Economics*, Palgrave Macmillan, London.

14 See Belleflamme, P. & Peitz, M. (2019a), "Platform competition: Who benefits from multihoming?," *International Journal of Industrial Organization*, Vol. 64, pp. 1–26. See also Belleflamme, P. & Peitz, M. (2019b), "The competitive impacts of exclusivity and price transparency in markets with digital platforms," CORE Discussion Paper 2019/19, Université Catholique de Louvain, for a non-technical discussion of the main results in Belleflamme & Peitz (2019a).

Let us now turn to the market scenario described in the previous Section, with single homing on side 1 and multi homing on side 2. In this scenario, competition between platforms becomes softer on side 2 and fiercer on side 1.[15] However, that does not necessarily mean that users on side 2 are worse off or that users on side 1 are better off. Also, the effect of multi-homing on side 2 on the platform's profits is ambiguous.

Consider the multi-homing side 2 first. Users on this market side will make their choice to join each platform separately (i.e. independently of the decision on whether to join the competing platform). Thus, multi-homing eliminates competition to attract users on this side, since the marginal user on one platform will join the other platform as well in any case. The lack of competition on side 2 has a critical implication for the distribution of bargaining power between users and the platform on side 2. Because each side-1 user single-homes, if any side-2 user wants to be connected to a specific user on side 1, then she will have to join the same platform that this specific side-1 user patronizes, as that platform holds an exclusive access to that user. Hence, in this scenario, each platform acts as a competitive bottleneck (or as a gatekeeper) to its side 1 user base, thereby raising their price on side 2,[16] possibly leading to too few side 2 users on their networks.

Consider now the single-homing side 1. As far as the price on this side is concerned, the outcome is more ambiguous. On the one hand, the value destroyed for a competitor by poaching some of its side-1 users does not give rise to a competitive advantage on side 2, as there is no direct competition anymore on that market side. That is, the competitor who loses some of its side-1 users is not in a worse competitive position on side 2, since all side-2 users multi home. On the other, the value generated when acquiring an additional side-1 user is larger because of bottleneck rents enjoyed on side 2.

The surplus gained by users on a given market side depends, naturally, on the price they are charged, but also on the price set by the platform on the other side. This is for two reasons. First, it follows from the above that the price charged to side-1 users will reflect the bottleneck rents available on side 2. Secondly, because the price set on one side may impact the number of users that will be available to interact with on that other side of the market, that price affects the level of cross-group network externalities within the platform.[17] Therefore, the single-homing side-1 users can either benefit or lose from a higher price on side 2, since they may be charged a lower price but could lose network benefits. It follows that the introduction of multi-homing on side 2 need not benefit users on side 1 (the single-homing side). On the contrary, while side-2 users (the multi-homing users) are charged a higher price in this scenario, they may derive greater network benefits because the lower prices charged to side-1 users may expand the number of users available to interact with on that side.

Using the words of Belleflamme & Peitz (2019a):[18]

> *In the two-sided single homing market environment, platforms compete on both sides of the market, whereas in the competitive bottleneck environment, they compete on only one. One may therefore be tempted to conclude that the users that obtain the possibility to multi home face higher prices and obtain a lower surplus, while the other users face lower prices and obtain a higher surplus. Also, since in the competitive bottleneck, platforms compete on only one side, one may expect that their profits are higher than in the market environment in which both sides single home. (…) Yet, the effect of letting one side multi home instead of single home is less straightforward than what may in general be perceived. While it is true that platforms exert monopoly power over the multi-homing side, participants on this side may actually benefit from multi homing. In addition, platforms may do better under two-sided single homing than in the competitive bottleneck.*

15 Here, we follow closely the description in Jullien & Sand-Zantman (2019), *op. cit.*

16 Put it another way, platforms are expected to compete fiercely for single-homers and, in return, to charge higher prices (or, using the language of the two-sided markets literature, to milk) multi-homers – the "bottleneck" problem.

17 A network benefit is generated by the interaction with users in the other group. In the context in which agents are sellers and buyers, the more buyers there are on a platform, the better-off are the sellers when they join this platform, as they have a larger potential demand for their products. Likewise, the more sellers there are on the platform, the better-off are the buyers, as they have access to a wider array of products. See e.g. Belleflamme & Peitz (2019b), *op. cit.*, who underline that: "Noteworthy is the fact that, in this model, it is not just the platforms that 'play a game' (price competition): users are also in a game situation, as the network benefits they obtain depend on what users of the other group decide" (p. 4). Along related lines, Evans, D.S., & Schmalensee, R. (2012), "The Antitrust Analysis of Multi-Sided Platform Businesses," Coase-Sandor Institute for Law & Economics Working Paper No. 623, point out that: "When there are material demand interdependencies the welfare of the customers on the multiple sides are inextricably intertwined, and may move in opposite directions as price structures change." (p. 22).

18 See Belleflamme & Peitz (2019a, p. 3), *op. cit.*

One important implication of these findings is then that, *a priori*, there is no clear-cut conclusion regarding whether the side that changes its behavior from single homing to multi homing (or *vice versa*) benefits or is hurt as a result. Likewise, for the welfare of users on the other market side. This analysis then clearly suggests that the only sensible way of assessing the likely competitive effects of single-homing in the context of platform competition is a case-by-case approach that fully captures the complex competitive dynamics involved.

In what follows we further defend this position by reference to the case of hybrid online marketplaces, reaching the conclusion that, when taking actions to prevent or enable single-homing, competition agencies and regulators must carefully factor in the specificities of the underlying business model, the strength of competition at the marketplace, and the relative bargaining power of the platform in the case at stake.

IV. SINGLE-HOMING IN HYBRID MARKETPLACES

One could argue that if multi-homing is limited on either side of the market (say, because it is too costly to patronize multiple platforms), then a multi-sided platform can raise prices and/or lower the quality offered to its current users without running the risk of losing business (on either side of the marketplace) to a more efficient competitor. As the discussion in previous sections suggests, however, this intuition is flawed, as how multi-homing affects users' welfare and platforms' rents depends on specificities of the platforms' business models as well as on the competitive dynamics involved.

In what follows we explain that the eventual materialization of the potential anticompetitive effects resulting from a platform becoming a bottleneck that provides exclusive access to single-homing agents critically depends on a number of interrelated factors: (i) a low degree of market contestability; (ii) high switching-costs and, thus, significant lock-in effects; and (iii) high bargaining power of the online platform *vis-à-vis* platform users on both market sides. We also explain why these assumptions are not verified in the case of hybrid marketplaces.

A. Market Contestability

Suppose that single-homing is a feature on one side of the market, while the other side multi homes, and consider whether the platform can exercise market power over third-party sellers seeking to do business with its single-homing user base.

The answer depends on whether the platform faces credible (actual or potential) competitors. Suppose it does. Then, multi-homing users may profitably delist from the platform if it tries to charge them too high a price. Of course, this will be more likely when the marketplace's share of single-homing consumers is low. Second, even if delisting is not a profitable option, users on the multi-homing side may downsize their activity on the platform. One way or the other, the decision to exploit its gatekeeper position will expose the platform to lose the business of multi-homing users initially and then, due to the operation of network effects, on the single-homing side as well.

Hybrid marketplaces are particularly exposed to the competitive pressure exerted by other direct competitors, whether actual or potential.[19] They typically serve both multi-homing and single-homing buyers, on one side, and multi-homing third-party sellers, on the other. Indeed, third-party sellers sell through several competing platforms, as well as through their own direct distribution channels, and often even offer in those direct channels more competitive prices and/or a higher spectrum of varieties.[20]

Since alternative distribution channels and platforms are promptly available, and no hybrid marketplace is likely to be a bottleneck for a substantial number of buyers, these marketplaces feel constrained in their ability to charge high prices. On the one hand, third-party sellers may delist from the marketplace. On the other, even if they do not delist, third-party sellers will pass on the marketplace's charges to consumers in that platform by raising their own prices and/or limiting the number and quality of varieties offered through the marketplace.

19 Using the words of Jullien & Sand-Zantman, *op. cit.*, "we should point out that tipping in digital markets may not resemble a natural monopoly as encountered in infrastructure markets. Large heterogeneity and low entry cost imply that while there may not be room for two large platforms, there are usually niche opportunities for small platforms, which may have the potential to challenge the incumbent." (p. 54).

20 See Dryden, N., Khodjamirian, S., & Padilla, J. (2020), "The Simple Economics of Hybrid Marketplaces," Competition, California Lawyers Association, Vol 30, No. 2, pp. 85-99. for a detailed discussion of the incentives of third-party sellers within hybrid marketplaces as opposed to other types of business models.

B. Switching Costs and Lock-in Effects

We have argued above that a platform trying to exploit a bottleneck risks losing both multi-homing and single-homing users. Of course, whether that is the case depends on the magnitude of any switching costs such users face. Only if those costs are not too high, a potentially contestable market will prove effectively competitive.

Arguably, the costs of switching from one marketplace to another are small, both for consumers as well as for third-party sellers. Yet, some consumers prefer to single home. Does this suggest that they are effectively locked in? Answering this question requires investigating three separate issues: (i) what are the consumers' perceptions regarding possible barriers to multi-homing, if any?; (ii) what is the true extent of single-homing?; and (iii) what drives the decision to single home?

A survey by Oxera, an economic consulting firm,[21] sheds some light on these issues by providing useful insights on how consumers use online marketplaces (such as eBay, Booking.com, Asos, Allegro or Amazon) to search for products or services in practice, as well as on consumers' preferences with respect to off-platform options.

Their survey respondents appear to make active choices over the platforms they use. The evidence suggests that they face no lock-in effects. Notably, most respondents use two or more websites when buying online, citing the ease of multi-homing as a reason for doing so.[22] In particular, the vast majority of (both multi- and single-homing) respondents do not to perceive any barriers to multi-homing in terms of time, cost, lack of awareness or incompatibility.

In addition, and very importantly, the results of the survey also indicate that the main reason why some buyers do not use more than one online marketplace is that they feel that the website that they use is the most appropriate for their requirements. Put it another way, single homing, when adopted, is a revealed preference rather than a compulsory or constrained option resulting from significant real or strategic switching costs.[23] Remarkably, this finding is in line with a recent result in the academic economics literature, according to which buyers tend to prefer the "competitive bottleneck" environment (where, again, only one side, say the sellers' side, multi-homes) when they value a lot the presence of multiple sellers and sellers find it profitable to multi-home.[24]

Hence, given that, in the context of hybrid marketplaces, consumers multi-homing is always an option, when consumers opt for embarking on single-homing strategies, they are actually signalling that the chosen platform is the one that attracts them the most because it offers a service which best fits their needs and requirements. So, single homing can, in this context, be simply understood as consumers rewarding the most attractive platform for their activities in terms of on-line shopping. Thus, as explained above, attempts to exploit multi-homing third party sellers may backfire on the single-homing consumer side if third-party sellers delist or otherwise respond by reducing the appeal of their offers in the marketplace.

C. Bargaining Power vis-à-vis a Platform's Users

A bottleneck can only be exploited if the platform has bargaining power both over its multi-homing and single-homing users. Absent bargaining power on the multi-homing side, the platform will not be able to monetize its exclusive access to certain single-homing customers. Absent bargaining power on the single-homing side, then competition for those single-homing users will expropriate any rents extracted from the multi-homing agents.

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21 See Oxera (2015), "Benefits of online platforms," available at https://www.oxera.com/publications/what-are-the-benefits-of-online-platforms/, for a survey involving European consumers from four countries.

22 Along related lines, Liu, Teh, Wright & Zhou, (2019), stress that: "following advancements in technology that make it easier for buyers to compare the options across multiple platforms, there has been a substantial shift in the capability and willingness on the buyer-side to multihome on platforms." (p. 2). Liu, C. Teh, T.-H., Wright, J. & Zhou, J. (2019), "Multihoming and oligopolistic platform competition", mimeo, National University of Singapore (available for download at: https://www.wrighteconomics.com/post/multihoming-and-oligopolistic-platform-competition).

23 As Oxera (2015), *op. cit.*, underlines, their analysis "suggests that, even with more time, at lower prices, with higher awareness of alternatives and increased compatibility across platforms, a large majority of consumers who single-home would continue to do so." (p. 23).

24 See Belleflamme & Peitz (2019a), *op. cit.*

There are reasons to believe that hybrid marketplaces do not have significant bargaining power on either side of their platforms. A marketplace's attraction depends on its ability to stimulate competition within its store in order to grant consumers the lowest possible prices, on the one hand, and on its capacity of enhancing the quality of its offerings and of attaining selection parity with other competing platforms and distribution channels, on the other. A marketplace which fails to deliver in either of these two dimensions, which are likely under the control of the third-party sellers operating in the marketplace, will fail.

The simple fact that these sellers can switch away a greater share of their business to competing platforms or to their own (direct) distribution channels provides them with a credible "outside option" that increases their bargaining power when the marketplace's commissions and fees are set. The hybrid platform will then, naturally, be prepared to make concessions in order to avoid creating a serious variety/selection gap within its marketplace, which would have a critical impact not only in terms of the platform's attraction from the eyes of consumers, but also as far as its sustainability is concerned.[25] Further, hybrid platforms also anticipate that if an important variety is missing in its product portfolio or traded at a non-competitive price within its marketplace, this might facilitate the entry of a new competitor aiming at exploiting a business opportunity in the specific market niche linked to that product variety.[26]

Hence, again, the logic of operation of the business model places severe limits to the marketplace's ability to exercise market power so as to extract surplus from the multi-homing side agents, which in turn imposes strict and pressing upper bounds on the access and other fees that it is able to charge to third-party sellers with multiple off-platform alternatives (such as own distribution channels and other online marketplaces).

The marketplace is also unlikely to have any bargaining power over its single-homing customers. Consumers benefit from lower prices, higher quality and greater variety. When looking for the best possible deal in terms of these dimensions, many of them will use the wide range of instruments available to increase market transparency, such as ranking or recommendation algorithms as well as "comparison platforms."[27] These services facilitate buyers to find, compare and review products and services, and even gather feedback from (other) consumers' experience. They have then greatly contributed to the reduction of transaction and search costs, and to the promotion of product discovery as well as of price and/or quality comparisons across alternative sellers.

Armed with all these comparison instruments, single-homing consumers will be able to switch away to an alternative platform or distribution channel, i.e. they will make use of their best "outside option," as soon as they discover a supplier offering a better deal elsewhere. By so doing, they can punish the marketplace they decided to sponsor on an exclusive basis and will only eventually come back later in case that original platform restores its competitive advantage in terms of lowest prices available and best quality and range of product varieties offered.

V. CONCLUSION AND POLICY IMPLICATIONS

In this paper, we have revisited a traditional argument in the literature on the economics of multi-sided platforms, according to which single-homing may create important "competitive bottlenecks" in the access to a group of exclusive users that decided to patronize a single platform. The main idea is that a platform may subsidize competition for this scarce and exclusive resource, the single-homing users, at the expense of high access or utilization fees charged to multi-homers on a distinct side of the market.

Even though the logic behind the "competitive bottleneck" argument may appear intuitive, and many have been persuaded by it, the likely welfare implications of the existence of single-homing users, for users on either side, are not unambiguous. They may be positive or negative depending on a number of platform-specific and market-specific factors. This then suggests that the only sensible way of assessing the likely competitive effects of single-homing in the context of platform competition is a case-by-case approach that fully captures the heterogeneity of business models used by online platforms and the competitive dynamics involved. Otherwise, competitive assessments or policy rules that ignore the underlying details and specificities of each case are likely to come up with serious errors and misjudgments.

25 Achieving selection and price parity with other distribution channels are important drivers of traffic within a marketplace, which is a key determinant of platform sustainability and attractiveness with respect to other platforms and distribution channels. See Dryden, Khodjamirian & Padilla (2020), *op. cit.*

26 As highlighted in Section 2 of the report by Autorité de la Concurrence and Bundeskartellamt (2016), "Competition Law and Data," in some cases, greater transparency can facilitate entry by new competitors (e.g. other platforms and/or channels) that gain access to more information about consumer needs and market conditions.

27 See Oxera (2015), *op. cit.*, for information on the use of comparison platforms, as well as for estimates on consumers' savings due to the use of those platforms. See also Moraga-González, J.L., & Wildenbeest, M., (2012), "Comparison Sites," in: Martin Peitz & Joel Waldfogel (Eds.): *Handbook of the Digital Economy*, Oxford University Press, pp. 224-253, for a study on the effects of product and price comparison sites on price competition and on market efficiency.

Policy makers, competition agencies and regulators should, therefore, avoid one-size-fits-all solutions of handling the competitive assessment of single-homing in multi-sided platforms. Instead, their (case-by-case) analyses should be based on solid and sound economic principles and, especially, must take into consideration that the competitive, organizational, and contractual environment wherein many well-known hybrid marketplaces operate, severely limits the ability and the willingness of those platforms to exercise market power by exploring their exclusive access to single-homing consumers, if single-homing is, in fact, what consumers decide to do.

In particular, and as demonstrated above, there are many reasons why hybrid platform marketplaces would not be able to extract high fees from third-party sellers and consumers even if a significant proportion of the latter chose to single-home.

In concluding, it should be highlighted that we have relied on a comparison between a scenario (or market environment) with two-sided single-homing with a scenario wherein there is a "competitive bottleneck" (i.e. one side is able to multi-home, while the other single-homes) to conclude that single-homing need not be anticompetitive. A related comparison is then whether the "competitive bottleneck" scenario is less desirable than a scenario with two-sided multi-homing. Whilst this companion comparison is not addressed in this paper, we believe that our conclusions regarding the need for a case-by-case analysis would naturally extend to this other comparison.

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