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Competition between ad-funded digital platforms

Could merging platforms harm consumers, even if they offer free services?

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Digital platforms funded by advertisements ("ad-funded platforms") are an increasingly important part of our lives. Their services – and the ability to participate in the communities that use them – are valued highly by consumers. Despite that, ad-funded platforms do not charge consumers for their services. They give them away. In exchange, consumers give up some of their time, attention, and data for advertisements, from which these platforms make their money.

Competition between ad-funded platforms is a hotly debated topic in both academic and policy-making circles.[2] In particular, how does a lack of competition affect consumers of free services? Competition Authorities commonly analyse changes in consumer prices to assess whether a merger might harm consumers. But those analytic tools break down when analysing free services.[3] That does not mean mergers between ad-funded platforms could not harm consumers. They could. Authorities may still object if a merger would harm consumers in non-financial ways, even though there is no possibility the platform would increase (or introduce) consumer prices post-merger.

Here, I set out how competition between ad-funded platforms affects consumers' interests, and how it could be assessed. First, strong competition for consumers leads to less intense levels of advertising, which benefits consumers. Second, mergers that reduce competition substantially can increase the time, attention, or data consumers must provide for advertising, harming their interests. Third, we cannot quantify that harm by analysing the change in consumer prices but we can assess it by analysing the change in the amount advertisers are willing to pay the platform for more intense advertising post-merger.

Ad-funded platforms' business model: 'free' services

Ad-funded platforms make money by offering services to different sides of a market. On one side they provide seemingly 'free' services, aiming to attract consumers' attention. On the other side, they sell that attention to advertisers, aiming to maximise their returns. Platform owners set the intensity of advertising they expose consumers to, and advertisers bid for the advertising slots available. A platform's value reflects how much advertisers are willing to pay for access. Google and Facebook are the two largest platforms adopting such a business model.[4]

A platform's performance on one side of the market depends on the other. Its ability to attract consumers of its free service affects the amount of advertising it can sell. Conversely, the intensity of advertising it exposes consumers to affects how attractive its services are to consumers. Attracting consumers depends on two conventional factors: the service's quality, and its price.

Consumers value the quality of service ad-funded-platforms provide in two ways. Firstly, they benefit from the intrinsic value of services provided. Depending on the platform, they might value the music they can listen to, or the games they can play. Secondly, consumers value access to a community of other users they can interact with. They might share pictures and messages with friends and family, or access news and insights provided by colleagues and contacts. In either case, ad-funded platforms can make their services more attractive by improving the quality of those services: providing better content or enabling better interaction with the community of other users.

Consumers do not pay money for ad-funded services. But they do give up their time, attention, or data for advertising. Whether we characterise that as reducing the service's quality, or paying a non-financial 'price', it is something consumers dislike. We can see that in surveys that show consumers see advertisements as a nuisance; the mushrooming growth of ad-blockers; or the number of consumers willing to pay for ad-free versions of a service. Ad-funded platforms can make their services more attractive to consumers by reducing intangible forms of payment relating to advertising.

[1] The opinions presented here are those of the author Shiva Shekhar, an Economist at Compass Lexecon, and do not necessarily reflect the views of Compass Lexecon LLC or its management, its subsidiaries, its affiliates, or its other professionals.

[2] The Competition and Markets Authority (CMA) has released a final report on "Online platforms and digital advertising", 2020 discussing ad-funded platforms. A similar discussion can be found in the "Digital platforms inquiry: Final report", 2019 published by the Australian Competition and Consumer Commission (ACCC). Similarly, the Stigler report (Scott Morton et al. (2019)) also discusses importance of such platforms. These reports concur that Facebook and Google are dominant.

[3] See Evans (2011) for a detailed analysis on how some of the tools breakdown under zero prices.

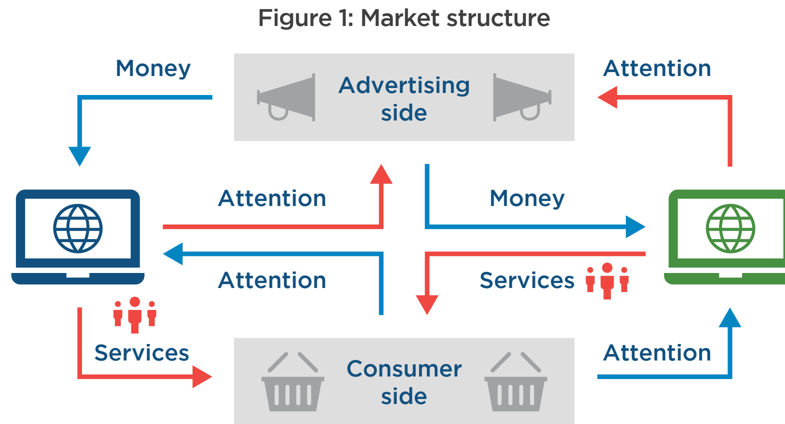
[4] See Digital Platforms Inquiry: Final Report, 2019 (2019) which suggests that the average advertising revenue per user was 116.3 Australian Dollars for Google search and 72.8 Australian Dollars for Facebook in 2018.

An ad-funded platform's value depends on its ability to balance the conflicting interests of consumers and advertisers. On the one hand, advertisers value (well targeted) access to users. All else being equal, the more advertising slots the platform provides, the more revenue it should make. Only all else is not equal. If consumers find the intensity of advertising unpalatable, they may seek and move to platforms with less intensive advertising. An exodus would reduce the amount of advertising the platform could sell. So, platforms must seek an optimum level of advertising to maximise their returns.

Competition between rival platforms reduces advertising, benefitting consumers

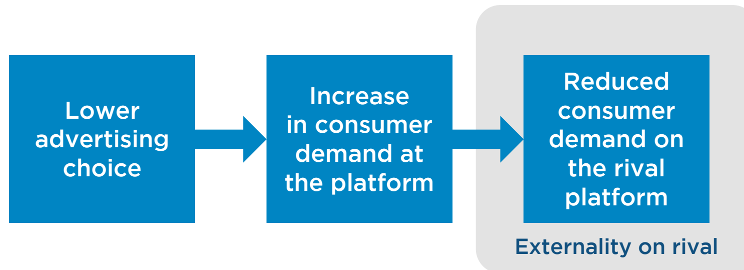
The most profitable level of advertising depends on the level of competition from other ad-funded companies. Figure 1 shows competition between two ad-funded platforms. Each platform provides services to consumers in exchange for their attention, and each platform sells that attention to advertisers for money. If competition is effective, neither company will unilaterally risk increasing the intensity of advertising in its users' experience, out of concern that they would move to the rival platform.

Figure 1: Market structure



Competition for consumers puts downward pressure on the advertising levels that consumers experience. One platform might reduce the intensity of its advertising in order to attract new consumers from the rival platform. If the rival platform did not respond, it would be less attractive to consumers, lose demand, and become less valuable to advertisers (Figure 2). For that reason, in a competitive market a rival platform would react, reducing its advertising intensity to maintain the status quo.

Figure 2: Externality on the rival



We find that competing platforms reduce advertising levels in two cases. First, when the amount consumers value the community of other users on the platform increases. This makes every additional consumer more valuable, so platforms compete more fiercely by offering lower advertisement levels to attract additional consumers (in effect, offering their services at a higher quality or lower non-financial price). Second, when consumers' dislike for advertisements on a platform increases. In effect, consumers perceive adverts as reducing the service's quality or its increasing (non-financial) price. Platforms then set lower advertising levels to compensate consumers.

Ad-funded platforms may provide services free of charge, but their competition for consumers is analogous to price competition. The only difference is that platforms compete on the amount of time, attention or data consumers must exchange for services, not the amount of money.

Mergers between rivals can increase advertising levels, harming consumers

A merger between two ad-funded platforms may reduce competition, harming consumers. Pre-merger, competition for consumers forced rival platforms to reduce advertising levels in order to retain and attract consumers. Post-merger, if the merger sufficiently reduces competition, then the merged entity could increase advertising levels without fear. That increase is a 'cost' to consumers, which they can no longer avoid by joining a more attractive rival platform.

Not all mergers between ad-funded platforms would harm consumers. It depends on the circumstances. Firstly, merging platforms must have been close rivals pre-merger, meaning there must have been significant overlap between the consumers they competed for. If that is not the case, the merger would not affect (let alone reduce) competition for those consumers. Neither platform would change how it set the intensity of its advertising, as the merger would not reduce the risk that a platform's users would switch to a rival.

Secondly, we consider a narrow market definition, where only two ad-funded platforms compete for the same consumers. If instead, we widen the market definition to include other platforms, competition may remain post-merger. The presence of another large ad-funded platform could mean that a merged platform may still lose users if it increased its advertising intensity, even if the merging platforms were rivals for consumers pre-merger. Additionally, a merger between two ad-funded pricing platforms may increase competition in a market if that merged entity can more effectively compete for consumers of services provided by a dominant consumer-funded platform. This might occur, for instance, when the merged entity has a larger community of users, in a market where consumers find that valuable.

Assessing harm to consumers

Assessing the potential harm to consumers of merging ad-funded platforms is not possible with traditional analyses. In traditional markets (i.e. with consumer prices), fierce competition keeps consumer prices low and a merger that would significantly reduce competition may lead to higher prices. Considering this fact, competition authorities analyse changes in consumer prices, using tools such as the upward pricing pressure test (UPP), to quantify the adverse impact on consumers of a merger.

Ad-funded platforms render the UPP test toothless, as there are no consumer prices to analyse. That does not mean merging platforms could not harm consumers' interests. They could. It just means that we cannot quantify that harm by analysing consumer prices.

Assessing harm to consumers with a downward pricing pressure (DPP) test

To assess the potential harm to consumers, we can look at changes in prices for advertisers, rather than consumers. After all, the change in prices that the merged platform charges advertisers reflects how the merger would change the consumer value of the services offered by the platform.

One solution would be a downward pricing pressure (DPP) test analogous to the UPP test in traditional markets. Post-merger, the prices charged to advertisers per advertising slot fall. That is because the total quantity of advertising on offer increases, reducing the price per slot. A competition authority could analyse that reduction in advertising prices to quantify the harm to consumers from higher quantities of advertising.

However, this proposed test is limited in its application. It is appropriate in markets where platforms are not competing for advertisers and are instead focused on attracting consumers. For instance, if most of the advertising supply (in terms of value) is from small advertisers who follow consumers, the test may quantify the harm to consumers. This test is not informative when platforms compete for advertising business as a merger may increase advertising prices. For instance, if the advertising market is comprised of large strategic advertisers that can significantly impact platform revenue, a merger might lead to higher advertising prices.

Mitigating the harm of mergers to consumers

Competition authorities may seek to protect consumers from increased advertising, even if services remain free of charge. How might they do so, other than blocking the deal?

One potential remedy would be capping advertising intensity at pre-merger levels. This is a well-known remedy that has been used in the TV networks industry.[5] It ensures consumers would be no worse off than before the merger, with respect to the harm advertising imposes. And they may be better off, if the merger provides a larger community of users that they value interacting with.

A second possible remedy would be a commitment by the merged entity to share with consumers the value it makes from more intense advertising. Specifically, any increase in advertising intensity must be accompanied with increased value and volume of services offered to consumers on the platform. Moreover, consumers must be able to choose whether and when they want to access the additional service and hence also the increased advertising volume post-merger. For this to be effective the platforms must ensure the following. First, consumers must be informed how the access (unlocking) of the additional service affects their experience on the platform. Second, in case consumers are unhappy with the "bundle" of additional services and the increased advertisements, consumers should be able to revert back to the pre-merger advertising levels. These two together ensure that only those consumers who obtain a net positive value from the additional services and increased advertisements are affected by the merger.

[5] The French regulator imposes a cap on the number of advertisements on TV channels.

This remedy allows both consumers and the merged entity to benefit from the merger. Consumers now have a choice between the new service quality and the pre-merger service quality. This creates a benchmark level of service quality that the platform must provide consumers for the new services to be adopted. The merged entity's incentive to increase advertising is checked unless they sufficiently compensate consumers for it.

To implement this remedy, the authorities only need to ensure that consumers have the ability to revert back to pre-merger levels of service and advertising volume. It is sufficient for the authorities to record the pre-merger advertising volume per consumer and the level of service offered by the merging parties.