

PLATFORM FOR DEBATE

Antitrust and the challenge of
regulation for online platforms

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About the author



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Summary

- Platform businesses bring together distinct but interdependent sets of users in such a way as to improve the welfare of each side of the market. Their central value proposition is the reduction of transaction costs, which increases the number of viable exchanges in the market.
- Whilst estimating the welfare effects of innovative businesses is difficult, a recent academic study using granular data put the consumer gains brought about by Uber in 2015 at \$6.8 billion for the United States alone.
- The rapid growth and large size of the leading online platforms has given rise to concerns from regulators and policymakers. Three areas of controversy stand out in particular: market definition, market power, and platforms' use of data.
- Defining the relevant market for online platforms is complicated by three factors: firstly, many services on the internet are available at zero price; secondly, pricing on one side of the market affects demand from the other sides as well; thirdly, the dynamic nature of competition online means that even large incumbents are vulnerable to challengers, often from adjacent markets.
- The requirements of platform governance suggest to some that online platforms have market power which they may abuse. But setting contractual terms that promote interoperability, even if it conceivably could reduce variety upstream, may in fact promote competition downstream by encouraging user switching.
- The potential for periodic – or even permanent – exclusion of certain users or participating businesses which fail to fulfill platform requirements is a matter of ongoing concern. But equally important is an awareness of the need for platforms to manage their internal markets effectively, to avoid markets' unravelling as a result of imperfect information and adverse selection.

- User data can best be thought of as an externality generated in the process of online interaction. Both firms and users gain from the fact that data can better be collected and interpreted thanks to new technologies.
- Whilst some analysts have argued that online platforms exhibit especially pronounced network effects, potentially constituting a barrier to entry, the evidence does not bear out the hypothesis of an emerging monopoly.
- Even the largest platform firms spend large amounts on R&D, and, far from becoming concentrated, both the definition of data and its use are constantly expanding and reaching new areas of business. Data is non-rivalrous, meaning that it is difficult to become successful simply by accumulating data rather than using it cleverly.
- Whilst regulators have traditionally followed a comparably hands-off approach to the internet, this attitude is clearly shifting by recent public announcements in Europe and elsewhere. However, an understanding of the central economic features of platforms arguably cautions against increased interventionism.

Background

The internet has brought down barriers to interaction between individuals and firms, creating opportunities for intermediaries to emerge and facilitate online transactions. Internet platforms achieve this primarily by lowering search costs, enabling the safe transfer of money, and providing feedback mechanisms which increase trust among users who, in the majority of cases, will interact only once or a few times.

Platform business models have been studied by economists since at least the 1990s (Rysman, 2009). Common offline examples include newspapers, the Yellow Pages, and shopping malls, as well as credit cards and video consoles (cf. Rochet and Tirole 2003). However, the widespread adoption of the internet and associated opportunities for low-cost exchange of information have led to the emergence of a whole range of new online platform businesses larger in size and economic significance than most of their offline counterparts. Accordingly, academic and policy interest in the economics of platforms has spiked since the early 2000s.

Currently, the largest digital firms – such as Apple, eBay, Google and Microsoft – operate in whole or in part as platforms, as do some of the most highly-valued startups such as Uber. For this reason, the economic and competitive analysis of platforms, and associated phenomena such as the presence and importance of network effects, the extent of market power and contestability, and the potential for exclusionary conduct have received a great deal of attention from regulators around the world.

This brief note reviews the economic features that characterise online platforms. It then goes on to discuss three salient competitive concerns which have been raised with regard to digital platforms: market definition, market power, and the role of data in platforms' business models. It

concludes with a discussion of recent developments in competition and regulatory policy in this sphere, with a particular focus on the EU.

The economic significance of platforms

Platforms bring together distinct but interdependent sets of users in such a way as to improve the welfare of each side of the market. They are characterised by the presence of network externalities: the welfare of an individual user on any side of the market depends on the number of other users on her own and other sides. The more consumers use Visa credit cards, for instance, the more likely merchants are to accept it as payment, therefore the more attractive it becomes for consumers to acquire a Visa card.

Network externalities and user interdependence also make pricing in a platform context essentially different from price-setting in one-sided markets. Whilst in the latter case price will approach marginal cost – plus a markup if the market is not perfectly competitive – in multi-sided markets where the presence of one side is especially important to lure other types of users into participating, that side may face below-cost (and sometimes even negative) prices.¹ Thus free-to-air television viewers do not pay for content, which instead is financed through advertising revenues attracted by securing a large audience for programmes.

The central value proposition of platforms – whether online or offline – is the reduction of transaction costs to enable participation by all the relevant sets of users (Munger 2015). Before the advent of search engines, there were people looking for information, and there were advertisers looking for buyers. Newspapers, magazines, and the Yellow Pages successfully

¹ Accordingly, the seminal papers in the economic literature on platforms focus on pricing structure and welfare effects under different competitive environments and user preferences (Armstrong 2006; Jullien and Caillaud 2003; Rochet and Tirole 2003).

brought the two together, but with the advent of the internet the scope for connecting the two vastly expanded, and now the most popular internet services – social media, video streaming, news, search, and so on – are paid for in whole or in part from ad revenues.

Online platforms have not only expanded the scope for viable transactions across a range of markets, but as a by-product have often increased competition in traditional markets. The emergence of subscription-based forms of media consumption – notably, web-based streaming services such as Netflix, Amazon Prime and Spotify – have made entertainment cheaper and led to a more diverse set of products than was the case in the age of mass television. Established players, not least the BBC, have responded by coming up with similar products which make the user experience more personal.

Ride-sharing applications provide another example of the welfare gains to be had from lower transaction costs. Before these were invented, there existed idle car owners looking for additional income, and passengers who either had to pay supra-competitive taxi prices or use less convenient public transport. Furthermore, imperfect information and private capture had led to extensive regulation of taxi markets, widespread consumer dissatisfaction and underprovision of this form of transport (Niemi and Zuluaga 2016).

Since platform innovations often result in the creation of new markets or a multi-fold expansion of existing ones, estimating their welfare effects with any accuracy is difficult. However, a recent paper from economists at the University of Chicago (Cohen et al. 2016) used large volumes of transactions data from Uber to obtain an approximation of the demand curve. It found that Uber's most popular service generated consumer surplus equivalent to \$6.8 billion in the United States alone. Other research has shown customer satisfaction with licensed taxis improving after the advent of Uber in a city, suggesting that increased competition spurred better service from the newly challenged incumbents (Wallsten 2015).

Competitive concerns around online platforms

The prominence of digital platforms in recent discussions of competition policy, and as plaintiffs and defendants in ongoing probes, can be explained by several factors. Firstly, the most valuable online platforms at the present time have obtained large market shares – when markets are narrowly defined – in a relatively short period of time. Their profit margins often significantly exceed those of other large public firms and of smaller competitors.²

Moreover, as platform operators these firms set some of the conditions and contractual terms under which users on the various sides can participate in the market, leading some to argue that this constitutes market power which may have been used to exclude competitors (European Commission 2016a).

Three areas of controversy stand out in discussions of competition policy with regard to online platforms: market definition, market power, and the relevance of data as an antitrust concern. We review each in turn.

² For instance, over the year to 31 March 2017 Apple's net profit margin averaged 20.33 per cent, whilst for Google it was 21.90 per cent (Yahoo Finance 2017). This compares with 16 per cent for all IT firms in the S&P 500, and around 10 per cent for listed firms in the index as a whole (Yardeni Research 2017).

Market definition: who are platforms competing against?

The degree of firm dominance depends on how broadly or narrowly one defines the relevant market. Traditional antitrust policy has involved an analysis of close substitutes and the supply and demand elasticities for those substitute products given a change in price by the dominant firm – the so-called SSNIP test. In addition, regulators such as the European Commission will consider the geographic scope of the relevant market, and by combining both will construct a measure of the relevant firms' individual market shares (European Commission 2017).

Even in offline industries, the question of market definition has often been the subject of controversy, with antitrust enforcers accused of a bias towards narrow definitions, whereas defendant firms are alleged to advocate for overly wide ones (Massey 2000). But the question becomes more nebulous still in the case of online platforms, for a number of reasons related to both the economics of the internet and the multi-sided nature of platform markets.

Firstly, many digital products and services are available at zero price. Users of search engines can make their queries at no monetary expense, whilst developers are able to write applications for a particular software platform – and to charge for app downloads – at low or zero cost (Evans and Schmalensee 2013). Sometimes this zero-price structure relates to the cost of providing one unit of the good or service in question – for instance, serving one additional search query has a marginal cost of zero. In other cases, as we saw above, it is the network effects of platforms which make it optimal for providers not to charge one side of the market at all.

The unavailability of a relevant price makes it impossible for regulators to examine substitutes and cross-price elasticities in the usual way. Other measures of switching costs – such as lock-in effects and barriers to entry – must be found, but these are often hard to quantify and defend, especially on the internet where, in principle, one can switch to a different provider with the click of a mouse.

Secondly, the multi-sided character of platform markets means that pricing decisions are made not just with regard to demand from the users who pay that price, but also considering the likely effects on demand from users on other sides of the market (Evans and Schmalensee 2008). This has implications for welfare accounting by antitrust authorities, but also for market definition.

For example, in the EC enquiry on Google Shopping, it has been alleged that Google favoured its own comparison shopping service over others, thereby harming competition between search engines (European Commission 2016). But this leaves open the question of which market the anticompetitive conduct took place in. Is the relevant market the market for internet search, and if so, should vertical – which are the main complainants in the case – as well as universal search engines be included in the definition? Or is the market for advertising, from which search engines obtain most of their revenues, the relevant one? And if so, should offline as well as online ads be regarded as part of it? What is the geographical scope?

The third complicating factor in digital markets is the dynamic nature of competition. Traditional antitrust analyses rely on comparative statics, where the number of relevant firms and associated market shares is held fixed. But the internet is characterised by rapid innovation and comparably low barriers to entry (Evans and Schmalensee 2002). This means that new entrants, if successful, can swiftly debunk incumbents and amass large market shares for specific products or services.

Indeed, most of the firms currently under scrutiny are less than a quarter-century old and have become large players only over the last decade. Furthermore, typically successful challenges to a firm's dominant position have not come from within the narrow market in which that firm operated, but rather from adjacent markets (Zuluaga 2015). Experience shows that their hold on the markets in which they operate is not as firm and immutable as a snapshot analysis of product market shares might suggest.

Market power and anticompetitive harm

Closely related to market definition is the question of when and how online platforms can abuse market power to harm the competitive process. As with market definition, the multi-sided nature of platforms makes establishing market power and the welfare effects of platform conduct more complicated than in one-sided markets.

For example, in the case of mobile software, a set of contractual arrangements between the software firms and mobile hardware manufacturers could be deemed overly restrictive and thus anticompetitive. However, if it led to greater interoperability between mobile devices, it would make switching across devices easier, thereby increasing competition

downstream and potentially offsetting the anticompetitive effects in the upstream market. This is a point we have made elsewhere with regard to the EC's Android investigation (Zuluaga 2016).

Perhaps more significantly, the use of even limited powers of exclusion and the enforcement of common standards is an essential part of platform governance. Yoo (2016) has documented how platform rules have evolved through trial-and-error to manage the tradeoff between flexibility and homogeneity – i.e. between variety and diversity in user choice, on one hand, and interoperability across devices and software versions, on the other. Indeed, the commercial success of a platform is defined by the extent to which it balances this tradeoff optimally, since that is what will determine user participation and the associated network effects.

The problems raised by the requirements of platform governance in terms of exclusion and potential harm to welfare have been discussed by Lilico and Sinclair (2016) with regard to the sharing economy. Their focus is on the impact of peer reviews and other user rating systems on the welfare of those who end up excluded from a platform. But there is a similar concern with regard to firms which might use a platform as part of their business and could find themselves excluded or demoted because of platform management policies. Indeed, the extent to which such policies are pro- or anti-competitive is a matter of current debate with regard to search engines.

At the same time, it has long been recognised that, without effective screening devices, markets subject to imperfect information and adverse selection may shrink or unravel altogether (Akerlof 1970). Thus, enabling online platforms to decide on governance mechanisms – including exclusion under specific circumstances – is important to ensure platform markets are sustained and that they reduce barriers to successful transactions. Furthermore, competition *between* rival platforms is as relevant to antitrust analysis as competition *within* a single platform, and the former will increase when rival platforms can differentiate themselves by deciding on their internal governance.

The uses and abuses of data in antitrust

The extensive collection by online platforms of user-generated data has prompted some commentators to declare it a “new currency” (Chandrasekaran 2015). The fact that many online services are free may further reinforce the impression that users are paying for them with their data. Yet, whilst data is a central input in the activity of platforms, it has a number of economic features which make it different from commodities as they are usually understood.

From an economic viewpoint, most user data can best be thought of as an externality generated in the course of online activity. As users interact with each other – as they type their queries, click on news articles, react to social media statuses and check into locations – they produce information which, when processed effectively over large numbers of users, can generate powerful insights about people’s preferences and interests. Platform algorithms are then able to show more relevant advertisements, increasing the commercial value of ads because users are more likely to click on them. The welfare of users also increases if we assume, as is plausible, that they prefer ads which are closer to their preferences, as revealed by their actions and interactions online, to those which are not. Indeed, it is one of the merits of platforms that they have managed to turn previously worthless – because hard to capture, aggregate and interpret – information into a valuable input which makes all sides of the market better off.

The ability of platforms to improve their algorithms using past data has given rise to a concern that network effects might be particularly pronounced in online platforms.³ It is argued that this “positive feedback loop” from a larger user base constitutes a barrier to entry, leading potential competitors to instead specialise in smaller niche markets, or altogether to refrain from participating (Stucke and Ezrachi 2016). But this account presents a number of problems.

Firstly, platform markets do not exhibit the characteristics commonly associated with monopoly or oligopoly. The high profit rates cited above are matched by high rates of R&D investment – of between 10 and 20 per cent of gross profit in the cases of Apple and Google (NASDAQ 2017).

3 A distinction is usually made between *direct* network effects – where users benefit from a higher number of other users – and *indirect* network effects – where product quality improves faster, the more people use it (Stucke and Ezrachi 2016).

By contrast, one would typically expect incumbents protected by entry barriers – whether ‘natural’ or government-enforced – to engage in little innovation and instead capitalise on monopoly rents.⁴

Secondly, making data an antitrust concern would require defining precisely what data is and in which instances it can be used for anticompetitive purposes. But the nature of the object eschews a precise definition: any information deemed valuable for economic purposes might be included, but technology and business innovations are constantly expanding the information to which this definition can apply. The ‘Internet of Things’ is just one example of how improved techniques for information collection are spreading across the economy and being used across all sectors.

The central issue with data is that its use is non-rivalrous – that one firm holds information on a user’s browsing history does not prevent others from having access to it and using it for their own commercial and other purposes. Unlike OPEC, the oil-producing cartel which held considerable sway over crude prices from the 1970s to the 2000s, it is difficult to conceive of successful collusion to corner the market for user data, because the latter is unlimited, and generated cheaply through constant online interaction.⁵

If data is potentially unlimited and its use becoming more widespread rather than concentrated in a few firms, then what makes it so valuable? Here is where platform management comes in, not just in the way costs, rewards and penalties are structured, but – crucially – in the way in which data is processed, analysed and put to use. The myriad different ways in which the same information can be interpreted means that, contrary to what some have argued, there can be no such thing as “neutrality” in the delivery of search results (Renda 2015). Competition via experimentation means the best algorithm wins.

Finally, even if one grants that indirect network effects are especially acute in platform markets, and that they will tend to result in a few big players’ dominating the market, it is not a given that this state of affairs would be

4 The chilling effect of monopoly power on innovation helps to explain why prominent state-sanctioned cartels such as U.S. railways and Britain’s nationalised industries in the 1970s performed so poorly.

5 The comparison to crude oil is motivated by a recent feature in *The Economist* (“The world’s most valuable resource is no longer oil, but data,” 6 May 2017). <http://www.economist.com/news/leaders/21721656-data-economy-demands-new-approach-antitrust-rules-worlds-most-valuable-resource>

harmful to welfare. If markets are contestable and the firm structure that emerges is efficient – i.e. there is concentration up to the point where the gains to users from network effects are maximised – then the impact on welfare will be benign, and integration will be pro-competitive.

Antitrust and regulation of online platforms: recent developments

Regulators and competition authorities have historically maintained a comparably light-touch approach towards digital industries. The rationale has been that online markets, because relatively new and rapidly evolving, could be stifled and innovation chilled if regulators acted prematurely (Chisholm 2015). The European Commission ostensibly reiterated this attitude in its recent communication on online platforms (EC 2016). However, a number of recent announcements suggest a more interventionist outlook, with potentially chilling consequences for competition and innovation in the digital sphere.

Under legislation announced on 10 May as part of the mid-term review of the Digital Single Market strategy, new restrictions would be introduced into freedom of contract between platforms and businesses (EC 2017b).⁶ Whilst there is as yet little detail on the substance of the new rules, they are likely to limit the extent to which platforms can enforce minimum standards of interoperability across devices and applications. The restrictions are likely motivated by a perception that online platforms currently enjoy market power, which they might abuse in their relationships with other businesses absent countervailing legislation.

However, to the extent that the new rules make platform governance more difficult, they may harm rather than protect user welfare. In particular, the ability to design and enforce rules of interoperability within platform

6 http://www.euractiv.com/section/digital/news/online-platforms-face-eu-regulation-on-transparency-and-business-contracts/?nl_ref=37441495

ecosystems – such as Android and iOS – is essential to ensure platforms perform their function of promoting successful interaction. Similarly, the ability of search engines to alter their rankings in response to user feedback – and to their own trial-and-error – is important to preserve the dynamic and evolving character of the internet.

On 11 May, there was another sign of increased interventionism when the Advocate General of the European Court of Justice argued, in his opinion on an ongoing case regarding the status of Uber, that the ride-sharing app qualified as a transport service (CJEU 2017). Whilst the AG's opinion is not binding, it is expected that the Court will follow his advice. Uber itself is already subject to this treatment in most Member States so will be less negatively affected than one might expect. The bigger concern is the impact that such a ruling could have on the future entry of new players, and the emergence of competitors in Europe.

These regulatory efforts, whilst often well-intentioned, appear to misunderstand some of the crucial features of online platforms: what their role is, how they add value, and under what conditions they can increase the welfare of those who use them. The three fundamental facts about online platforms are the following:

- They exist to lower the cost of transactions and, on the margin, to make a greater number of interactions – commercial and otherwise – possible than would be the case without them.
- They are intermediaries whose business model is generally not the sale or delivery of particular goods or services, but rather the conditions in which such transactions can take place optimally.
- They compete with each other by creating, and continuously adjusting, the conditions in which users participate. Adjustments follow user feedback or an anticipation of user preferences.

Public authorities must keep these core features of online platforms at the heart of public policy to ensure continued innovation and greater competition in this increasingly important line of business.

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