



Defining the relevant market in the sharing economy

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Abstract: Since the establishment of commercial sharing economy services like Uber, Blablacar, Lyft, Airbnb, TaskRabbit, etc., the debate about the sharing economy and its effects on competition has generated lively discussions, which have too often dangerously departed from a debate based on objective (market) observation to evolve into a quarrel among the supporters and opponents of the online platforms. Undoubtedly, the peculiar features of these new firms' business models create frictions with the traditional regulatory environment, which currently appears to be incapable of framing them into models and schemes typical of a previous economic phase, such as, for example, one-sided markets, no externalities, and competition mainly on price. Nevertheless, setting aside the more or less impromptu debate about the "social goodness" of these firms, we argue that competition enforcers should look at their effective market power. In fact, as the basic principles of competition law teach us, only when those firms have (more or less legitimate) significant market power, will they be subject to special responsibilities and to stringent restrictions and obligations. Toward this aim, it is first necessary to define the relevant market. And, immediately afterwards, to delimit firms' market position. This, in turn, should help to assess their compliance with the competition rules and the obligations that they are – or rather that they should be – subjected to. This exercise is not an easy one because the traditional regulatory concepts and definitions do not seem to reflect the competition dynamics that characterise the new markets on which we are reflecting. In this paper we focus on a number of challenges that are posed by the sharing economy businesses, suggesting that they could be solved with the traditional competition instruments, although adapted to the peculiar features of the markets that are at stake. These include, among others, multi-sidedness and the presence of different externalities.

Keywords: Business models, Pricing, Sharing economy

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BACK TO BASICS

The effects of the sharing economy on competition continue to trigger an intense debate, which has too often departed from concrete market observations to evolve into a quarrel among the supporters and opponents of some of the online platforms, which each of us will have come across.

One area in which the debate often departs from reality is in terms of dimensioning. The world economy is not all about sharing platforms. This is certainly a very fast growing and rapidly evolving phenomenon, which will affect an increasing number of economic sectors. However, it is estimated that its size, over the next decade will amount to something around 0.5% of world GDP (Credit Suisse, 2015).

Nonetheless, online platforms which allow demand and supply for goods and services to meet have become more and more present in daily life, and they are certainly key players in a number of markets where they represent the benchmark for future developments. Meanwhile, the sharing economy businesses are impacting, in a disruptive way, an increasing number of traditional business models and industries (De Streel and Larouche, 2015; Monopolkommission, 2015).

Put together, this poses an urgent and interesting challenge to competition enforcers and, at the same time, it necessitates more careful discussion than has occurred so far. The features of many of the sharing economy firms' business models create frictions with the traditional regulatory environment, which often appears to be not properly equipped to frame them within models and schemes typical of a previous economic phase. This is true not only from a competition perspective, but also from, by way of example, labour law and the sectorial regulation perspectives.

Setting aside the (more or less) impromptu debate about the "social goodness" of those firms, the enforcers of competition rules should work to overcome the current feeling of inadequacy or, even worse, of the uselessness of the discipline in observing and assessing the phenomenon and the ability to adequately intervene, if this is needed.

On the contrary, competition rules are fundamental and must accompany this phase of economic change, disruption and innovation, and even more intensely so in the near future. Empirical work has been abundant over recent years (among others: OECD, 2015; Aghion, Bechtold, Cassar, and Herz, 2014; Gomellini, 2013); yet what is missing is a concrete adaptation of well-established principles into the new economic scenario, taking into account what we have recently learnt about two-sided markets and the externalities thereof.

In fact, multi-sided market scenarios pose peculiar practical problems that take competition rules out of their traditional comfort zone; this, in turn, implies the application of the toolkit that has been developed over decades of enforcement and litigation in a renewed way. Which does not mean that the toolkit has to be considered to be a dinosaur.

This paper is the beginning of a longer work that we intend to carry out on sharing economy platforms. We start by suggesting some approaches for the definition of the relevant market in the digital economy. We do so after having briefly described the main and peculiar features of online platforms and of their business model(s), together with the main challenges that they pose to competition law.

THE SHARING ECONOMY AND PLATFORMS: SOME USEFUL DEFINITIONS

For many scholars, the sharing economy describes “a rise of new business models (‘platforms’) that uproot traditional markets, break down industry categories, and maximise the use of scarce resources” (see among others: Allen & Berg, 2014). Slightly differently, the European Commission defines the collaborative economy as being “a complex ecosystem of on-demand services and temporary use of assets based on exchanges via online platforms” (Upgrading the single market, Communication of October 2015).

Both of these definitions attribute a key role to online platforms, which are the most typical example of firms adopting a two-sided business model. Literature on two-sided markets and models has developed massively in the last few years (Rochet and Tirole, 2006; Genakos and Valletti, 2012; Filistrucchi, Geradin, van Damme, and Affeldt, 2014; Hagiu and Write, 2015). However, it is not within the scope of this paper to analyse this literature. What matters for this paper is to specify that although there appears to be some confusion in the way certain terminology is used in the current debate, two-sidedness should refer either to markets or, eventually, to business models, but not to platforms *per se* (Baden-Fuller and Haefliger, 2013).

Indeed, scholars commonly recognise some of the features of online platforms as adopting two-sided business models (Ruhmer, 2011; Jullien, 2011; Filistrucchi, Geradin, and van Damme, 2013; Evans and Schmalensee, 2013). As is known, these are firms selling two different products or services to two different groups of customers, where the demand from one group of customers depends on the demand from the other group of customers (interdependency). Platforms help to coordinate the participation of buyers and sellers (both users of the platform), to reduce the interaction costs for the two groups of users so that all agents are better off and receive positive network effects through using the platform. The interdependency among the group of users creates indirect (positive) network effects, as the value of the platform for one group of users grows with the growing of the user base on the other side of the platform (see the Introduction to this Special Issue by Erickson & Sørensen, 2016). These effects increase the value that the economic actors can realise from using the platform. All of these features boost

sharing economy businesses, whose majority relies on low interaction costs and a wide base of users in order to work efficiently.

In fact, while traditional markets are one-sided -- think of any business such as taxis, food sales, shopping centres, gasoline stations, professional activities -- in certain cases, markets can be “natively” two-sided, such as online search engines. However, as we will explain in more detail later in this paper, the same market can encompass economic activities adopting different business models, and so can a single firm. On the other hand platforms are simply technological instruments that, by their very nature, are neither one nor two-sided. What is two-sided is the business model that they choose, or the market in which they operate.

These are not just formalistic clarifications. While making the definition of the market more complex, the two-sidedness should neither generate confusion nor validate the tendency to necessarily consider each business model as a separate market. This would result in an incorrect approach to market definition, which could severely distort assessment by enforcers and, consequently, the remedies that are proposed or imposed by them.

Platforms act as intermediaries and internalise the externalities generated by each of the two groups of customers for the other one (that is, that are not externalities for the platform). Externalities for the users are typically two-fold. Usage externalities are verified because the two groups of users need to act together and use the platform to reciprocally create value. They are mutually indispensable to making a valuable exchange. In addition, membership externalities exist because the value generated for one group of users increases with the number of users on the other side of the platform. These result in a positive feedback loop, whereby more users on one side attract more users on the other side.

The platform plays a crucial role in creating these indirect network effects for users, as its main interest is to develop the largest possible critical mass of subscribers on both sides (“the community of users”). The platform creates network effects for its users via price and commercial strategies (including marketing and design), to balance its interest with those of the two groups. The interests of each group that is related to the use of the platform are different from those of the other group, both in terms of price and of the demanded services and functionalities. Economists have described this as the “chicken and egg problem”, a situation where “to attract buyers an intermediary should have a large base of registered sellers, but these will be willing to register only if they expect many buyers to show up” (Caillaud and Jullien, 2003). This inevitably affects price strategies, which tend to favour the group of customers with the higher level of indirect network effect.

In relation to the price strategies adopted by platforms structured according to a two-sided model, one of the main differences to be noted is between transaction and non-transaction platforms. In the former, there is a transaction between the customers of the platform via the same platform (e.g., e-hailing car service, auction houses, credit cards), while in the latter there is no such a transaction (e.g., media, traditional TV). Digital platforms are typically of the first type.

Now, why does this matter for competition law? In a very simple manner, this matters because it strictly affects market definition and the identification of market power. As mentioned, by adopting a two-sided business model to intermediate supply and demand, a platform can potentially turn a traditionally one-sided market into a two-sided one. This can open traditional markets to new players who become competitors to the historical incumbents.

What usually happens is that the newcomers exercise a potentially significant market pressure on traditional players. This is particularly the case for transaction platforms, that can competitively use leverage on price and that can do so on both sides of the market (while traditional players operating on one-sided markets have a unidirectional price structure). In addition, sharing economy platforms can usually count on lower fixed and variable costs (including workforce costs), the possibility to reach a wider audience of potential customers in a much shorter time, a reputation building process that relies on instruments that are often unavailable to traditional players. Finally, experience has shown that the rise of these platforms is so rapid and massive, that a winner-takes-all dynamic often ensues. The consequence is thus that platforms can act as gatekeepers, impeding the entry of subsequent new players into the market and slowing down innovation.

In a nutshell, what we have discussed above suggests that, when it comes to online platforms, assessing market power becomes a fundamental challenge for competition enforcers. As the basic principles of competition law teach us, only when firms detain significant market power, will they be subject to a special responsibility, and thus to stringent restrictions and obligations.

As is known, economists define market power as the ability to raise prices consistently and profitably above competitive level/marginal costs. We, as lawyers, would rather use the words of the Court of Justice of the European Union, which defines it as the power to act ‘to an appreciable extent independently of its competitors, its customers and ultimately of the consumers’ (Case 85/76, Hoffmann-La Roche). There is no valid reason why this should not be applied to online platforms also.

In a similar fashion, competition rules are intended to make sure also that online platforms operating two-sided business models do not illegally gain market power (cartels), misuse their legitimate market power (abuse of dominance), or create players with too much market power who alter the competition dynamics on the relevant market(s) (mergers control).

What may change is the way that market power is assessed. In fact, in these businesses, the latter often does not coincide with the market share; or, at least, it does so less than in traditional businesses. It is enough to remind the reader that in the sharing economy, users, the community of reference, reputation and trust play a fundamental role. With the *temporal* dimension of market power to be evaluated carefully, in a way that was unknown until a few years ago.

Having said that, it remains true that to properly assess market power in online platforms, as in any other sector, it is first necessary to perform an exercise, which may appear to be extremely obvious and predictable, notwithstanding the fact that only a few have carefully done it so far: to properly define the relevant market, and, immediately afterwards, to identify the actual or potential competitors of the relevant firms, to delimit the latter’s market position and to be able eventually to assess their compliance with the competition rules and the obligations to which they are – or rather should be – subjected.

DEFINING THE RELEVANT MARKET

As has been seen, sharing economy platforms and businesses create a number of problems concerning the application of competition principles and models. To solve them, the first question competition enforcers are called to ask themselves is how to define the relevant market

in which these platforms operate.

This means, for example, establishing whether Uber creates a new market, or whether it competes with taxi services. Or to determine whether Google does or does not compete with Amazon. To do so, various elements need to be taken into account, such as, among others, the characteristics of the different services and their prices. Moreover, the market definition exercise, in the case of the sharing economy platforms, usually raises a number of additional questions, which scholars and policymakers have a lively debate about, although no final answers appear to have been found yet. In this section, we focus on what we believe to be the most important of those elements so as to draw a few guidelines for future analysis.

Before doing so, we briefly remind the reader that, in competition assessment, a commonly used tool with which to define the relevant product market is the so-called “Small-but-Significant-Non-Transitory-Increase-in-Price-Test” (SSNIP test). It consists of observing whether a small increase in price (in the range of 5 to 10 percent) would provoke a significant number of consumers to switch to another product (in fact, a substitute product). In other words, it analyses whether that increase in price would be profitable or if, instead, it would just induce substitution, making it unprofitable for the firm. Following the European Commission’s approach, the test is essential in the definition of the relevant market, because “product characteristics and intended use are insufficient to show whether two products are demand substitutes [...] differences in product characteristics are not in themselves sufficient to exclude demand substitutability [...]” (European Commission, 1997). However, as we will explain below, in the context of the sharing economy this test needs further adaptations.

We have mentioned that the sharing economy is characterised by various technologies and business models. This is true specifically for the sharing economy platforms, but also more generally for electronic communications, media and the so-called Over-The-Top (OTT) services. One example is the “triple play” package of network operators, which may allow the latter to differentiate their offers from those of competitors by adding the provision of pay-TV content. By way of example, copper and fiber communication networks, cable networks, Wi-Fi networks, LTE networks, etc., from a user’s perspective can all well belong to the same market. The overlapping of different technologies constitutes the first challenge for market definition. Nevertheless, if, as mentioned, demand substitutability is the key criterion for identifying the relevant market, then when multiple technologies can be used for the same purpose and users perceive them to be interchangeable, we should consider that all of the providers of these different technologies are competing in the same market. Good examples are OTT and SMS messaging systems, as well as Voice over Internet Protocol (VoIP) and traditional calls. In the sharing economy, one of the best known examples might be that of traditional taxis and Uber.

As for business models, we notice that a number of them can be present in the same market, while this was, and is, rarely the case with traditional industries. Not only can competing firms each use a different business model, think, for example, about BlaBlaCar and Lyft for ride-sharing, or Airbnb and Couchsurfing for room sharing, but, what is more, even a single firm can decide to adopt more than a single business model on the same market, depending on the specific product or service it provides. A good example is Amazon. In fact, in the market of shopping malls, the company operates as a one-sided model for some products like new books, buying them at a wholesale price and selling them at a retail price. For other products, such as clothes and electronics, Amazon acts as the provider of a web portal for producers who set their retail prices directly (Rysman, 2009; Broos and Ramos, 2015). Another example is Spotify,

which offers free and premium access, depending on the service required.

However, while it is true that the presence of various business models complicates the definition of the market boundaries, on the other hand, we have already expressed our concerns in regard to the overlap between the concepts of the market and the business model, as the former can embrace more than one of the latter. What is more, one might argue that the fact that different business models are adopted can be interpreted as a signal of the existence of competitive constraints on the market, rather than as the existence of separate markets. Let's take once again Uber as an example. If we consider its business model to constitute a market, then we should conclude that Uber and traditional taxis operate on two different markets. On the contrary, if we do not overlap the concepts, we could argue that they both operate in the same marketplace, and that the existence, within the latter of their two different business models puts competitive pressure on each of them (see Leiren and Aarhaug, 2016, in this issue). Once again, demand substitutability helps in the exercise of defining the relevant market. In fact, as long as users see two or more different offers as being substitutable, we shall assume that providers are competitors in the same market. A meaningful example is pay-TV and free-to-air TV. In this case, different financing mechanisms are chosen by providers -- and consequently different business models are adopted -- so it is not sufficient to identify two separate markets; this happens only if viewers do not consider the two services to be substitutable. We consider this example to be meaningful in supporting our argument. Nevertheless, we acknowledge that the approach followed by different competition authorities, both in Europe and abroad, has been various. The European Commission, in the cases BSky/KirchPayTv, NewsCorp/Premier and Antena 3/La Sexta, considered pay-TV to be a relevant product market that is separated from the free-TV market. On the contrary, the UK Competition and Market Authority has taken a different approach, and in the case BSky/ITV, has defined one relevant market comprising different business models: pay-TV and free-TV. As for scholars, see Calvani, E. and Polo M., 2014; Peitz, M. and Valletti, T., 2015). With concrete reference to a sharing economy, a good example is Airbnb. Assessing whether it operates in the same market as traditional hotels or B&B private rentals depends, among other factors, on whether travelers consider the former to be a substitute for the latter.

Another element to which we would like to draw attention to is supply side substitutability. In fact, numerous sharing economy platforms offer a wide range of qualities or grades of one product/service. In addition, they are able to switch production to the relevant products/services and to market them in the short term without incurring significant additional costs or risks in response to small and permanent changes in the relative prices (Commission Notice, 1997). As is known, this is possible thanks to the wide possibilities offered by the extensive dematerialisation and the consequent dramatic drop in production and transaction costs, which are brought about by the *internet revolution*. On the contrary, this does not happen for traditional industries like, among other, transport, accommodation, and the pharmaceutical and chemical industries, whose switches in production would imply gigantic costs and long transition periods. All things considered, we believe that the supply side substitutability could play a weightier role in the definition of the relevant market. By way of example, some scholars have applied the test to Google Search and Google Shopping, concluding that they are substitutable for advertisers. See Broos and Ramos (2015).

Furthermore, because of the two-sidedness of most sharing economy platforms, whether by nature or by business model, we need to further adapt the SSNIP test in order to take into due account the cross-group externalities, which give rise to network effects. To start, usually two-sided platforms can set two prices, one for each side of the market, thus, the first question is to

identify which price the hypothetical monopolist should raise. Moreover, because both sides are linked through cross-group external effects, and therefore the profitability depends on the price level on both sides, the second question is whether one should consider the profitability on one side or on the other. The most adequate solution, because it takes into account not only the prices on the two sides, but also the externalities, appears to be the following. In the case of non-transaction platforms one should check the profitability of a price increase on each side, while in the case of transaction platforms, one should check the profitability of an increase in the total price level, in other words, the sum of the prices paid by the transactions of the two parties. By way of example, in the case of Airbnb, the test should be made on the sum of the transaction fees paid to the platform by the property owner and the traveller.

An additional element to consider when applying the SSNIP test is that in a number of sharing economy businesses the users do not pay for the product/service. The platforms therefore have to compete on other attributes, such as quality, extensive distribution, new product developments, the respect of privacy and data protection, etc. If, on the one hand, it is true that those attributes are more difficult to quantify, on the other hand, it is also to be noted that, both at the academic and enforcement levels, there is a rising attention being placed on innovation and its role as a parameter of competitive pressure. Among the contributions given by scholars, see Ibanez Colomo, P. (2015). As for the enforcement side, good examples of the attention dedicated to innovation and incentives to innovate in the framework of a competition analysis are the following: Microsoft (COMP/C-3.37.792) Intel/McAfee (COMP/M.5984), and the current Google case, i.e. Google Search (COMP/AT.39740); Google Android (AT.40099) and Google Search AdSense (COMP/AT.40411). In fact, if we look at the sharing economy businesses, we notice that the acquisition of market power, and, in parallel, the establishment of a wide community of users, largely depend on the innovative nature of the service/product offered. Moreover, it is undeniable that disruptive innovators are gaining scale rapidly, while it often becomes difficult, if not impossible, for competitors to keep pace or to create a customer base that could allow them to effectively compete. The combination of innovation and rapidity is extremely relevant in shaping competition dynamics in the market.

As has been confirmed by the above, defining the relevant market, in the case of sharing economy businesses, and more generally in two-sided platforms, is not a simple exercise. A clear conceptual framework has not yet emerged. Furthermore, the case law is not of great help; in fact, if we look at the enforcement practice, we still notice a number of inconsistencies. By way of example, in the Google/DoubleClick case (COMP/M.4731), only one market was taken into account during the merger's assessment. On the contrary, in the MasterCard case (COMP/36.518), the European Commission shifted its approach and looked at two interrelated markets. Moreover, while usually the two-sidedness of a market is – rightly – taken into account when defining the relevant market, in at least one case, that is Microsoft/Yahoo Inc., the Commission looked at this peculiar feature only at the stage of the competitive assessment.

We are conscious of the complexity of the issue. Nevertheless, as mentioned at the beginning of this section, we have tried to identify a number of guidelines concerning demand and supply substitutability, network effects, and competition on quality aspects, rather than price, the relevance of scale and innovation, that should be taken into due account while performing the analysis from a competition perspective. Before concluding this part, we would like to mention two more aspects that, in our view, deserve close attention.

First, we believe it to be extremely important to look at the geographical dimension of the market. If, on the one hand, it is true that a number of sharing economy platforms depend on a

local dimension - in order to work effectively users on both sides need to be physically close - on the other hand, many of the sharing economy businesses have rapidly acquired scale and currently operate on a global basis. Defining the geographical market in one way or another can have strong implications. In fact, the lack of global enforcement powers makes very likely that the identification of global markets is not followed by the capacity to enforce competition rules in the same way everywhere. On the other hand, if we define the market as being local, we are confronted with the necessity of coordinating enforcement actions on a national, regional or even global level, or sharing economy firms will have to cope with the burden of shaping a different business model for each local market in which they operate around the world. Finally, the definition of the geographic dimension of the market can have a strong impact on merger assessments.

The second and final issue that we would like to raise in this section concerns the “temporal” dimension of the relevant market, and, in particular, aims to reflect on its duration. In extremely dynamic and innovative markets such as those of the sharing economy businesses, market boundaries change rapidly, for at least two reasons. First, technological developments and (disruptive) innovation happen at a fast pace. Secondly, new technologies often allow, or even push, for convergence among traditionally separated markets. In both cases, the SSNIP test is affected, and then the definition of the relevant market changes. Consequently, competition enforcers should find the appropriate way to balance the need for legal certainty for companies, and the need not to artificially crystallise market analysis.

CONCLUSIONS AND POLICY RECOMMENDATIONS

It is a time of great and rapid change. This holds true for the world economy and, thus, for competition law and economics.

The challenges posed by new technologies and their growing effects on industries should not scare competition enforcers, nor should it put them in a sort of residual mood, where some would like to confine them on the assumption that everything in the sharing economy is about self-regulated reputation.

As we have tried to show in this paper, the principles of competition law that have developed over time are still valid, and the toolkit that is in the hands of both companies and enforcers is still useful if smartly adapted to the new economic scenario and its extremely fast evolution.

There is certainly no one-size-fits-all approach. As platforms are very different, analysis should be case-specific. However, bearing in mind the principles of the discipline, some guidelines can be identified – even if only in terms of the mistakes to be avoided.

Markets, platforms and their related business models, do not have to be mixed up, otherwise market definition would be misguided, bearing in mind that the same company can operate with several business models (and on several markets), and that the same market can be exploited in many different ways.

Demand side substitutability will play a crucial role in identifying who is competing with whom. However, given the decreasing production costs that are related to the internet economy, to switch production is much easier and much less risky than in the traditional industries, so that supply side substitutability should play a larger role in market definition.

In addition, network effects and cross-group externalities should be carefully considered when using the SSNIP test. Together with non-price competition, which, in many platforms, is the key business feature, quality, distribution and – above all – the innovation pace of the services and products offered, are seminal in attracting customers, creating a large user base and, thus, exercising a difficult-to-face competitive pressure on other players.

As mentioned, these elements should be balanced with the temporal dimension of the market and with the degree of (fast) disruption characterising many online businesses.

It is not the first time that great economic and social transformations have posed dramatic challenges to competition law and have forced it to (re)evaluate consolidated case law and principles, by exiting from its comfort zone. By way of example, the end of the state monopolies between the close of the 1980s and the beginning of the 1990s, as well as the consolidation of many markets into oligopolies on the eve of the new millennium, were periods that were certainly no less full of queries for competition law than the situation we are in today. In those times, the discipline was able to reinterpret itself and to play a crucial role in the economy, growth and innovation. Now, it is time to play a similar role.

REFERENCES

- Accenture, (2016). Platform Economy: Technology-driven Business Model Innovation from the Outside In. Report. Available at: https://www.accenture.com/t20160125T111719__w__/us-en/_acnmedia/Accenture/Omobono/TechnologyVision/pdf/Platform-Economy-Technology-Vision-2016.pdf
- Adner, R. & Kapoor, R. (2010). Value creation in innovation ecosystems: how the structure of technological interdependence affects firm performance in new technology generations. *Strategic Management Journal*, 31(3), 306-333.
- Aghion, P., Bechtold, S., Cassar, L. & Herz, H. (2014). The Causal Effects of Competition on Innovation: Experimental Evidence. Working Paper. Available at: http://scholar.harvard.edu/files/aghion/files/causal_effects_of_competition.pdf?m=1393886457
- Allen, D. & Berg, C. (2014). The Sharing Economy. How over-regulation could destroy an economic revolution. Institute of Public Affairs Paper, available at: https://ipa.org.au/portal/uploads/Sharing_Economy_December_2014.pdf
- Aloisi, A. (2015). Commoditized Workers. Case Study Research on Labour Law Issues Arising from a Set of “On-Demand/Gig Economy” Platforms. *Comparative Labor Law & Policy Journal*, 37(3).
- Auer, D. & Petit, N. (2015). Two-Sided Markets and the Challenge of Turning Economic Theory into Antitrust Policy. Available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2552337
- Baden-Fuller, C. & Haefliger, S. (2013). Business Models and Technological Innovation. *Long Range Planning*, 46(6), pp.419-426.
- Botsman, R. (2015). Defining The Sharing Economy: What Is Collaborative Consumption — And What Isn't? *Fast Company*, 27 May. Available at: www.fastcoexist.com/3046119/defining-the-sharing-economy-what-is-collaborative-consumption-and-what-isnt (accessed 29 June 2016).
- Broos, S. & Ramos, J.M. (2015). Google, Google Shopping and Amazon: The Importance of Competing Business Models and Two-Sided Intermediaries in Defining Relevant Markets. Working Paper. Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2696045
- Caillaud, B. & Jullien, B. (2003). Chicken & egg: Competition among intermediation service providers. *RAND journal of Economics*, 34(2), 309–328.
- Calvano, E. & Polo, M. (2014). Strategic Differentiation by Business Models: Free-to-Air and PayTV's. Available at: http://www.cresse.info/uploadfiles/2015_pa2_p4.pdf
- Colangelo, M. & Zeno-Zencovich, V. (2015). La intermediazione on-line e la disciplina della concorrenza: i servizi di viaggio, soggiorno e svago, *Il Diritto dell'Informazione e dell'Informatica*, 1- 2015.
- Colomo, P. I. (2016). Restrictions on Innovation in EU Competition Law. *European Law Review*, (2), 201-219.

Court of Justice of the European Union (1979). Case 85/76, Hoffmann-La Roche & Co. AG v Commission of the European Communities. ECR 1979 -00461.

Credit Suisse (2015). Sharing Economy: cogliere nuove opportunità di investimento. Accessed online: <https://www.credit-suisse.com/it/it/news-and-expertise/economy/articles/news-and-expertise/2015/11/it/sharing-economy.html>

Dervojeda, K., Verzijl, D., Nagtegaal, F., Lengton, M., Rouwmaat, E., Monfardini, E. & Frideres, L. (2013). The Sharing Economy, Accessibility-Based Business Models for Peer-to-Peer Markets. Case study no. 12, European Commission, Directorate-General for Enterprise and Industry, Brussels.

De Streel, A. & Larouche, P. (2015). Disruptive Innovation and Competition Policy Enforcement. OECD Paper, DAF/COMP/GF (2015)7, available at: [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/GF\(2015\)7&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP/GF(2015)7&docLanguage=En)

Eisenmann, T.R., Parker Marshall, G.G. & Van Alstyne, W., (2006). Strategies for Two-Sided Markets. *Harvard Business Review*, October 2006.

European Commission (1997). Notice on the definition of relevant markets for the purposes of Community competition law, 197 OJ C 372/5, p. 36.

European Commission (2015). Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Upgrading the Single Market: more opportunities for people and business. COM(2015), 550 final.

European Commission (2000). Case COMP/JV.37 – BSky/KirchPayTV.

European Commission (2007). Case COMP/C-3.37.792 – Microsoft, OJ 2007 L 32.

European Commission (2008). Case COMP/M.4731 – Google/DoubleClick.

European Commission (2008). Case COMP/M.5121 – News Corp/Premiere.

European Commission (2009). Case COMP/36.518 – MasterCard.

European Commission (2010). Case COMP/M.5727 – Microsoft/Yahoo!Search Business.

European Commission (2011). Case COMP/M.5984 Intel/McAfee, OJ C98/1.

European Commission (2012). Case COMP/M.6547 – Antena 3/La Sexta.

European Commission (2015). Antitrust: Commission sends Statement of Objections to Google on comparison shopping service', MEMO/15/4781.

Filistrucchi, L., Gerardin D., Van Damme, E. & Affeldt, P. (2014). Market Definition in Two-Sided Markets: Theory and Practice. *Journal of Competition Law and Economics*, 10, 292-339.

Genakos, C. & Valletti, T. (2012). Regulating prices in two-sided markets: The waterbed experience in mobile telephony. *Telecommunications Policy*, 36(5), 360-368.

Gomellini, M. (2013). Innovation and Competition: A Survey, Banca d'Italia Paper, available at:

<http://www.bancaditalia.it/pubblicazioni/altri-atti-convegni/2014-innovazione-italia/Gomellini.pdf>

Hagiu A. & Wright J. (2015). Multi-sided Platforms. *International Journal of Industrial Organisation*, 43, 162-174.

Jullien, B. (2011). Competition in Multi-Sided Networks: Divide-and-Conquer. *American Economic Journal: Microeconomics*, 3(4): 1-35.

Kler R. & Kouris I., (2012). Business Models in Two-Sided-Markets - An Assessment of Strategies For App Platforms. Rotterdam School of Management Paper.

Koopman, C., Mitchell, M. & Thierer A., (2015). The sharing economy: issues facing platforms, participants and regulators. Mercatus Center George Mason University, available at: <http://mercatus.org/publication/sharing-economy-issues-facing-platforms-participants-and-regulators>

Monopolkommission (2015). Competition policy: The challenge of digital markets. Special Report 68, available at: <http://www.monopolkommission.de/index.php/en/reports/special-reports/284-special-report-68>

OECD (2015). Hearing on Disruptive Innovation. DAF/COMP(2015)3, available at: [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP\(2015\)3&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DAF/COMP(2015)3&docLanguage=En)

Office of Fair Trading, (2007). BSky/ITV

Peitz, M. & Valletti, T. (2015). Reassessing Competition Concerns in Electronic Communications Markets. *Telecommunications Policy*, 39, 869-912.

Rochet, J.C. & Tirole, J. (2006). Two-sided market. A progress report. *Rand Journal of Economics*, 28, 327-343.

Ruhmer, I. (2011). Platform Collusion in Two-Sided Markets. Working Paper (University of Mannheim).

Rysman, M. (2009). The Economics of Two-sided Markets. *The Journal of Economic Perspectives*, 23(3), 125-143.

Smorto, G. (2015). Verso la disciplina giuridica della sharing economy. *Mercato Concorrenza e Regole*, 2, 2015. Û

Thépot, F. (2013). Market Power in Online Search and Social-Networking: A Matter of Two-Sided Markets. *World Competition, Kluwer Law International*, 36 (2).

Woskowiak, D. (2014). Unlocking the sharing economy: An independent review. Department for Business, Innovation and Skills. United Kingdom.

Zingales, N. (2013). Product market definition in online search advertising. *Competition Law Review*, 9, 29-47.