

The Platformization of Digital Markets

Comments on the Public Consultation of the European Commission on the Regulatory Environment for Platforms, Online Intermediaries, Data and Cloud Computing and the Collaborative Economy

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Executive summary

Online platforms play an increasingly important role in the European business landscape. Guided by questions from the European Commission's consultation on this topic, the paper aims to provide insight into the characteristics of online platforms and the resulting regulatory challenges. Issues such as the transparency of platforms or the organization of the Sharing Economy are currently under debate. Generally speaking, one main concern is that online platforms do not account for their users' interests sufficiently, resulting in hardly desirable market outcomes. The paper provides economic reasoning as to why this concern is not always justified and suggests possible policy measures in cases where regulatory action is necessary. The most important aspect being currently discussed in this context is the access to and the use of data. Data are at the center of most online platforms' business models. While regulation to ensure data protection is naturally important, this aspect is the main reason to refrain from overbearing regulation and to emphasize a rule-of-reason approach. European policy-makers need to find the balance between consumer protection and fostering new innovative business models.

1. Introduction

Digitization essentially changes businesses. It affects the way companies work, the way they are structured and ultimately how a company is defined. In this changing business environment, online platforms play an increasingly important role. From well-known, large US platforms such as Google and Facebook to small, startup companies offering peer-to-peer services in a platform-setup, online platforms now constitute a vital part of the digital economy. While many aspects of their business activities are the same or very similar to physical companies, there are many issues associated with them that warrant closer analysis. The reason for this is that digitization is accompanied by new phenomena such as the importance of data that have rapidly become relevant and increasingly so.

Against this backdrop, the European Commission in its attempt to create a Digital Single Market has launched a public consultation with respect to online platforms (EU Commission, 2015). The goal is to gain insight into the way platforms work in order to improve the Commission's ability to review the relevant existing regulation or even impose a new framework if deemed necessary. The following analysis is guided by the Commission's questions and aims to provide economic insight into the most important aspects of online platforms currently under debate. Besides characterizing online platforms, the focus is on their transparency and on the access to data and their use. Moreover, the challenges of the Sharing Economy – or Collaborative Economy, as it is called in the consultation document – are discussed as a specific form of platform.

2. Characteristics of Online Platforms

The ongoing digitization of all aspects of business and life gives rise to so-called online platforms. "Online platform" refers to a business model operating in two (or multi)-sided markets, which uses the Internet to enable interactions between two or more distinct but interdependent groups of users in order to generate value for all of the groups (EU Commission, 2015a). For an online or offline platform to work, it is paramount that users on all sides of the platform benefit in some way from using it. If one side derived no value, it would have no incentive to use the platform. As Evans and Schmalensee (2007, p. 2) put it: "The platform helps [...] customers to get together in many ways and thereby creates value for these customers that they could not readily obtain without the coordination provided by the platform." This typically includes subsidization of one side of the multi-sided market by one or more other sides: By charging different prices on different sides of the market, the platform is

able to affect the volume of the transactions (Rochet/Tirole, 2006). This implicitly means that arbitrage between the different sides is impossible (Evans/Schmalensee, 2007). Search engines, online market places, news aggregators, media platforms, video sharing platforms, social networks and Sharing Economy platforms are some examples for online platforms (EU Commission, 2015a).

The relative size of a two- or multi-sided platform is generally influenced by five factors that also determine the concentration of the market (Evans/Schmalensee, 2007):

1. Indirect Network Effects

Indirect network effects imply that users on one side of the market benefit from an increasing number of users on the other side. The higher this effect is, the bigger the relative size of the platform. If platforms become very large, however, indirect network effects may also decline.

2. Scale Economies

While marginal costs of online platforms are low, platforms incur high fixed costs that result in large economies of scale. More platform users imply lower total costs per user: One additional user costs virtually nothing, and the fixed costs are distributed over a higher number of users. This affects market concentration positively. Diseconomies of scale are generally also possible due to the increasing complexity of the platform when it increases in size.

3. Congestion

Particularly common in physical markets, a high number of users on either side of a platform can result in congestion. This limits the sensible size of a platform. Online platforms are able to prevent this, at least to a certain extent, by organizing the provision of their product or service in the digital space where a large number of data is easily categorized and matches between the different sides of the platform are consequently made more easily than offline.

4. Platform Differentiation

In order to gain and to maintain a competitive edge, platforms differentiate themselves from each other vertically or horizontally. While vertical differentiation refers to different qualities of a product or service, horizontal differentiation means targeting a specific group of users. In consequence, the number of potential users and hence the relative size of the platform is limited. In general, heterogeneous users make differentiation more feasible.

5. Multi-Homing

Platform differentiation results in multi-homing if consumers use several similar platforms for different needs or even for the same needs. A typical example are social networks. Many users use both Facebook and Google+. Therefore, competing platforms are able to share a market.

Table 1: Determinants of platform size

	Effect on market concentration
Indirect Network Effects	+
Scale Economies	+
Congestion	-
Platform Differentiation	-
Multi-Homing	-

Source: Evans/Schmalensee, 2007, p. 166

Online platforms are very heterogeneous. This is why the advantages of using one can differ immensely depending on the business model of the platform and the sector of the economy they are active in. Furthermore, the advantages depend on what online platforms are compared to, companies in the physical world or even a different market set-up. Table 2 summarizes the main advantages of online platforms that range from the simplification of business transactions to cost and price reductions.

Table 2: Advantages of online platforms

Advantage of online platform	Explanation	Examples for online platforms
Simplification of business transactions		
Accessible information	Many business models of online platforms center on providing information that is particularly easy and quick to access because it is online.	Search engines, location-based business directories, news aggregators ...
Easy communication and interaction	The internet facilitates communication and interaction, often over large distances. Communication mechanisms are a vital part of many online platforms.	Payment systems, social networks, Sharing Economy platforms, ...
Improved match of supply and demand	Online platforms are easy to access and to use. This way, they attract large numbers of users and are therefore able to match demand and supply more easily.	Sharing Economy platforms, location-based business directories, ...

Increased trust between peers	Generally, the internet enables interactions between consumers and providers that do not know each other, hence establishing trust is vital. In peer-to-peer transactions, rating mechanisms increase trust. There is no such mechanism in the physical world.	Sharing Economy platforms, specialized search tools, ...
Creation of opportunities		
Increased choice	Online platforms provide an overview of products and services while often including every possible choice. This gives room for the development and offer of even more choices because consumers are reached more easily than in the physical world.	Online market places, Sharing Economy platforms, specialized search tools, ...
Creation of new markets and new business opportunities	Digitization in general and the concept of an online platform in particular offer a tremendous amount of room for innovation due to new (technological) possibilities.	Audio-visual and media platforms, app stores, Sharing Economy platforms, ...
Reduction of prices and costs		
Transparency of prices	Prices are easy to access online and hence easy to compare.	Price comparison platforms, online market places, ...
Lower prices	The access to and comparison of prices makes it harder to offer a comparable product at a higher price than a competitor. This results in more competitive, possibly lower overall prices.	Online market places, price comparison platforms, Sharing Economy platforms, ...
Increased competition	Some online platforms enter markets that have been dominated by a few firms for a long time. Using their unique business model to their advantage, they are able to increase competition in those markets which can lead to lower prices.	Price comparison websites, Sharing Economy platforms, audio-visual and media platforms, ...
Lower cost of access to consumers	Online platforms provide access to a large number of consumers at little cost because the costs incurred by	Online market places, Sharing Economy

	the platform are much lower than they would be in the physical world.	platforms, search engines, ...
Sustainability		
Easy sharing of resources	Online platform can facilitate the sharing of resources which, in a world of scarcity, can be a way of achieving sustainability. Also, this can simply lead to a higher number of users that can be reached with a service.	Sharing Economy platforms, video sharing platforms, news aggregators, ...

Sources: Cologne Institute for Economic Research; EU Commission, 2015a

3. Trust and Transparency

Trust is a vital part of all online platforms, especially of those offering peer-to-peer services (Finley, 2013). Since business interactions involving online platforms do not occur face-to-face and supplier and consumer often do not know each other, trust building mechanisms are vital. One way to achieve trust in the digital economy is via transparency. Similarly to traditional businesses, online platforms need to adhere to basic transparency rules in order to ensure a level playing field. This includes displaying information on items covered by consumer law, on what is sponsored content as well as information about the suppliers themselves if they are not identical to the platform. Most platforms already include this information as standard.

It is probable, however, that some online platforms do not provide a systematic and easily understandable overview of this information. First and foremost, they consequently neglect using transparency as a trust-building mechanism. Economic reasoning suggests that if they offered the same product or service as a more transparent, and therefore more trustworthy platform, consumers would prefer the latter. However, this only holds if consumers check the terms and conditions of their business partners. That is why strengthening the awareness of personal responsibility in the digital economy is a lever to increase the transparency of online platforms. If consumers deal with the transparent platforms only, the others will be crowded out of the market or forced to adapt their own information policy. This could be supported by offering templates for transparent terms and conditions to online platforms. As a side effect, this would also significantly reduce the costs for startup platforms.

In addition to transparency, trust in online platforms can be established using reputation systems like ratings or reviews. For users of the platform, consumers as well as suppliers, it is helpful if this trust-building mechanism is displayed prominently on the platform's website. The mechanism needs to be explained clearly for users on all sides of the platform. The most important aspect, though, is to ensure that the mechanism is not manipulated. For ratings of suppliers, this could mean that only consumers who have verifiably interacted with a supplier are able to rate this interaction, for example. Depending on the mechanism, it might be helpful to establish a seal of quality that online platforms can apply for at an independent institution and that indicates that the trust-building mechanism is certified (cf. section 4.1). This procedure would also enhance trust in the online platform itself which is generally more difficult. This is similar to building trust in traditional companies which requires a diverse mix of activities that do not necessarily have the same effect on all business partners and consumers. These activities include, but are not limited to: transparent terms and conditions, a congenial and believable company image and strategy, and a quick and reliable customer service.

One reason why transparency is of such great importance for online platforms is that they are able to collect vast amounts of information, in many cases personal data. This makes users more susceptible with respect to how this information is being used. Transparency of business practices in this area is therefore helpful in dispelling the concerns and fears of (potential) users. The use of data will be analyzed in more detail in the next section.

4. Data Access and Data Use

4.1 The Importance of Data

Data are often deemed the currency of the internet (e.g. Greengard, 2015; Curtis, 2015): Users are said to pay for online services that are technically free of charge with their data. For online platforms, this is only partially correct. A key characteristic of a platform is that typically users on one side of the platform subsidize users on the other side (Rochet/Tirole, 2006). Take a search engine, for example: While users who search can do so free of charge, companies pay for the advertisements shown next to the search results. At this point, the consumers' data are irrelevant. They are used, however, to improve the service for both sides of the platform. By using the search queries to improve the algorithm searching the internet, the results over time match consumers' perceptions better. Moreover, using the data allows the platform to skim the willingness to pay of advertisers by personalizing advertisements to the

consumers' interest. In that sense, consumers actually do pay for the (improved) search with their data.

Not only for search engines, but for all sorts of online platforms, generating, aggregating and analyzing data is an important part of the business model. Data are used to improve the service and hence the market share of the platform and to attract advertisers. Online platforms have thereby become an important part of the European economy, increasing competition in many markets. However, the playing field between online platforms and traditional companies is not always level, especially when it comes to the use and protection of data. The most prominent example is the telecommunication industry which is subject to strict regulation with respect to data protection. The online platforms competing with them in the market for telephone conversations or text messaging (OTTs – over-the-top content suppliers) are not that strictly regulated. In consequence, it remains unclear if and how they use the generated data. As this example illustrates, the use of information by platforms and its lack of regulation are a competitive advantage for the new entrants and thus prevent a level playing field. However, there have been some developments to ensure a level playing field. Just recently, Google's email service Gmail was ruled to be a telecommunication service by an administrative court in Germany (Verwaltungsgericht Köln, 2015). If this ruling lasts, Google will have to comply with the strict telecom regulation, including data protection regulation.

Overall, it is important to review the existing regulation in the relevant markets. With respect to the use of data, especially sensitive personal data, it might be useful to adjust regulation for online platforms. In some cases, however, less regulation for traditional firms might also be appropriate. This very much depends on the market, the business models of the online platforms and the generated data. Any regulation designed for online platforms should take into account the importance of data for those business models. The aim should be to guarantee a level playing field, not to create a competitive disadvantage for the platforms.

Even the most appropriate regulation cannot replace every user's personal responsibility with respect to their data. Users sometimes lack the awareness that their actions online create data that might be used. This can at least partly be mitigated by prominently displaying information on the online platforms on the data collected and the terms and conditions of their use. Even then, it is highly likely that some users that are not content with these terms still use the service. Strengthening the awareness of personal responsibility with respect to online activities in schools could be a way to counteract this.

4.2 Data Access and Transfer

The emergence of business models like online platforms centered around data raises the question of who is allowed access to the data. One appealing characteristic of data is that their transfer to another entity is easy and virtually free of charge. It is clear-cut that the creation of the Digital Single Market in the European Union cannot be successful without considering data access and data transfer. Generally speaking, two types of data can be distinguished, namely personal and non-personal data. In the context of online platforms, most of the data being generated are personal data. Personal data are defined in the EU Directive on the protection of such data as “... any information relating to an identified or identifiable natural person ...” (EU Parliament / EU Council, 1995, Article 2(a)). Identification happens directly or indirectly, “... in particular by reference to an identification number or to one or more factors specific to his physical, physiological, mental, economic, cultural or social identity” (ibid.). Data generated by user activity on online platforms are almost always personal data under this definition (European Data Protection Supervisor, 2014).

For users of online platforms, access to data they have voluntarily left – for example data they stored using a cloud service or data they uploaded on their social network page – is an understandably sensitive subject. Any change in the terms and conditions of access to those data by online platforms should consequently be avoided. If a change is necessary, it should be announced in a transparent way and in due time. That way, users have ample time to take appropriate action if they want to. This approach indicates that the platform is transparent and its quality of service is high. This impression could be enhanced by a rating, certification scheme or a quality seal issued by an independent agency. For users of the platform this would be a more objective indicator of quality than the platform’s transparency alone. As a result, trust might be enhanced which would benefit the platform immensely in its attempt to attract a large user base. It seems unnecessary, though, to establish such a formalized quality seal through public authorities. They could support a privately-financed seal and thereby increase its credibility. The funding of such a seal would have to be covered by the online platforms being assessed and eventually awarded the seal. This system already works very well with respect to higher education accreditation. Platforms would have an incentive to apply and pay for the seal if it is a credible sign for their trustworthiness. The more online platforms exist, the more attractive a quality seal becomes. A prerequisite for this mechanism to work, however, are high standards of the seal-awarding institution, possibly ensured by public monitoring.

Access to personal data can also refer to access by the online platform itself, for example to transfer data for storage reasons. Countries as well as companies today

are strongly interconnected (IW Köln / IW Consult, 2015). This often leads to data being exchanged cross-border between enterprises. Until the ruling of the European Court of Justice on 6 October 2015 declaring it invalid (ECJ, 2015a), data exchanges between companies in the European Union and the United States were conducted adhering to the “Safe Harbor” framework. Under this scheme, companies in the United States that imported personal data from their European subsidiaries or other European enterprises voluntarily subscribed to the seven Safe Harbor principles, such as notification of individuals about the purpose of information collection (Bange et al., 2013). Before the ruling, the European Commission took the view that the Safe Harbor framework ensured an adequate level of protection of the transferred data, such that no further monitoring was deemed necessary (ECJ, 2015b). For companies transferring data to their US counterparts the Safe Harbor framework provided the necessary legal basis for their activities. After the ruling, this is no longer possible, creating legal uncertainty for a great number of European and American enterprises as well as stifling progress and innovation. A new data protection agreement between the European Union and the United States is urgently required.

While the Safe Harbor framework focused on the transfer and safe-guarding of personal data, the rise of the so-called Internet of Everything – also known as the Internet of Things, Industrial Internet or Industrie 4.0 – generates great amounts of non-personal data. The idea behind the concept is to create intelligent, digitally interconnected systems that allow people, machines, objects and products to communicate and to co-operate (Plattform Industrie 4.0, 2015). The data that are generated when machines communicate with each other, for example, might allow for an improvement of the production process and consequently for substantial cost savings. The data might even be able to support new business models along the value chain. As long as it is just one company within which the data are generated, the use of these non-personal data is a big chance for that company to improve its performance. Due to the interconnectedness of the Internet of Everything, in many cases more than one company takes part in the data-generating process. While contracts might be able to solve some of the possibly arising conflicts about the right to collect, possess and analyze the data, a non-market solution could still be required. This would be the case if the access to the data was easier for one stakeholder than for the other. If one company can exclude others from using data that can probably be transferred into a competitive advantage, it might have a strong incentive to do so. It is therefore necessary to set the ground rules for access to and use of non-personal data at EU level. Especially in cases where data are generated in an automated manner, specific measures at EU level are crucial. Take an automated vacuum cleaner, for example, that measures the room layout using laser technology to find the most efficient route to clean the whole space. Doing this, it automatically generates data. In some cases, the user of the device generating the

data might not be aware of this. Since transparency is an important aspect of online platforms (see section 3), an obligation to inform the user about the data being generated is commendable. As set out above, to avoid strategic and anti-competitive behavior, it is furthermore necessary to attribute the right to use the data to some entity. Especially in circumstances with many stakeholders, this is a tough task. It might then be useful to share the data between those stakeholders in order to ensure a level playing field.

In the context of data access, restrictions imposed on the location of data are also an issue. For some data, such as tax records or corporate documents for example, regulatory bodies in the EU have predetermined their storage location. In many cases, these data are required to be stored in the same jurisdiction that they are produced in (De Brauw Blackstone Westbroek, 2013). Digitization and the advent of cloud computing services that are able to store data on servers anywhere in the world have rendered an overhaul of the current regulation necessary. Local storage is no longer a necessity since data stored in cloud systems are accessible from everywhere.

Against this backdrop, there are still several valid reasons for data location restrictions. Generally, these are security-related. First and foremost, there is a strong argument to restrict the storage and access of data that might be of interest to foreign powers in order to preserve national security (De Brauw Blackstone Westbroek, 2013). Security can also be a reason for location restrictions on another level: Public security could also play a role. In each case, it is important to exactly define the affected data and to impose as little regulation as possible. The norm should be that there is no location restriction but instead the owner of the data can freely decide where to store them. This ensures personal freedom and allows new business models such as cloud computing services to flourish. In case of an expected severe impact of non-regulation on national or public security, restrictions should be imposed, however. Ideally, these restrictions would be determined at a European level in order to make business easier for online platforms than in case of different restrictions in different EU member states. For online platforms that are trying to scale up in order to make use of economies of scale, cross-border activity is essential. They are therefore in many cases automatically active in several jurisdictions, making the access to data a complex challenge.

4.3 Data Portability

If switching online platforms is costly, users of the platform might face a so-called lock-in effect (Shapiro/Varian, 1999). It is difficult to change to a different platform

offering a similar service, meaning that users are effectively bound to the platform that they are currently using. The main reason users are locked-in with respect to an online platform is data. Customers as well as suppliers generate data when they use an online platform, either directly or indirectly. If they change the platform, they typically have to leave the data – such as emails, search histories or even an acquired reputation rating – behind and start over on a new substitute platform. Data portability could contribute surmounting such a lock-in: Under this mechanism, users would be able to transfer their data from one online platform to another without hindrance (Swire/Lagos, 2013).

Generally speaking, creating lock-in is often part of a platform's strategy (Shapiro/Varian, 1999) since it impacts the platform's growth and its market position: If users are locked in, it is easier to reach, maintain and enhance a monopoly – especially against the backdrop of extensive network effects. For online platforms, lock-in consequently equates to a competitive advantage which they work hard to maintain. Data provided by users are first and foremost used to build a unique service. Lock-in occurs because users value this service: They value the emails they have received, the quality of search results or reputation derived from repeated online interactions. They have an incentive to stay with their particular platform because the service is better than elsewhere since it is tailored to them. This competitive advantage would be destroyed if data had to be transferable. If users could take their search history with them to another service provider, the investment incentives in these kinds of businesses would be severely impacted. The extent of the lock-in effect highly depends on the characteristics of the platform, however (for an overview, confer Shapiro/Varian, 1999): For example, switching costs are much lower (but still relevant) for search engines than for social networks. The customer lock-in risk also includes reduced negotiation power in reaction to price increases and service discontinuation (for example in case the platform provider goes out of business).

The repeated interactions between an online platform and its users resulting from lock-in also have benefits. The uncertainty dealing with an unknown company and unknown suppliers in the online world is reduced. If companies work as transparently as recommended in section 3, the way the service works as well as terms and conditions become better known and trust can be built.

The digital and the physical world have in common that data are produced during each economic interaction. Take a company searching to take out a loan, for example. At its relationship bank, the risks and hence the costs are calculated using firstly the data that the company supplies. Secondly, other data, like its credit history or its payment morale in the past, are taken into account. None of the latter is

transferable to another bank. There, the company asking for a loan would just have to supply the same information about itself again, whereas aspects such as credit history would not play any role. This example demonstrates that data portability is not guaranteed in the physical world. The main difference to the digital world is that data play a much more important role online than offline and are the very essence of most online platform business models. Also, the extent to which market power can be abused is larger in the online world due to network effects.

The actual question is, however, whether switching costs and the resulting lock-in foster the abuse of a dominant market position. European competition law requires consequences in this case. However, the past has shown that market power stemming from lock-in effects need not be permanent, especially with respect to online businesses. While the VZ-social network (that started out copying American competitor Facebook) was the most successful such business in Germany in 2009, it has since been replaced by Facebook, for example (onlineich, 2009, 2010). Oligopolistic competition between online platforms offering similar services is possible as the American search engine market shows, which is divided (although not evenly) between Google, Yahoo and Bing (Statista, 2015).

Against this background, a per-se approach of data portability for all online platforms that exhibit switching costs is neither appropriate nor necessary. The main goal should be to keep regulation to a minimum such that investment in innovative business models is not squashed. A rule-of-reason approach based on the characteristics of the relevant market and business model is more useful and gives room for online platforms to flourish.

5. Specific Challenges to the Sharing Economy

The so-called Sharing Economy – alternatively labelled Collaborative Economy – has been on the rise in Europe and elsewhere. It refers to a special kind of online platform that includes “economic activities that focus on sharing goods, service or knowledge” (Demary, 2015, 4). Sharing economy platforms “link individuals and/or legal persons [...] allowing them to provide services and/or exchange assets, resources, time, skills, or capital, sometimes for a temporary period and without transferring ownership rights” (EU Commission, 2015a, 33). This definition includes B2C (business-to-consumer), B2B (business-to-business) and P2P (peer-to-peer) types of transactions as well as costly transactions and ones free of charge (Demary, 2015). The challenges associated with these types of platforms are partly the same as for other online platforms. The fact that suppliers (or providers, as they are called

by the EU Commission) are often individuals results in some specific challenges. Overall, these challenges can be categorized according to the group of stakeholders they affect.

5.1 Challenges to Sharing Economy platforms

Regulatory framework. Due to their specific architecture, Sharing Economy platforms often do not consider themselves subject to the same regulation as traditional providers. That is why a quick review of the existing framework in the relevant markets is urgently necessary to determine the appropriate regulation in order to ensure a level playing field (Demary, 2015).

Opposition from traditional companies. Typically, Sharing Economy platforms compete with traditional firms in several markets, be it the taxi market or the market for travel accommodations, for example. They face severe opposition by the traditional incumbents who try to protect the market and raise barriers to entry by insisting on adhering to the existing regulation despite the Sharing Economy business model and technological change. In many European countries, this conflict is addressed by taking it to court, usually because traditional companies file a suit. Especially for small startup Sharing Economy platforms, this poses an unpredictable risk due to their financial constraints. Not resolving the conflict, however, causes legal uncertainty that is especially hard to deal with for young companies. It is even possible that the financial burden of legal action forces Sharing Economy platforms out of the market. A review of the regulation in each market is therefore essential in order to create legal certainty for Sharing Economy companies and disperse the threat of legal battles (Demary, 2015). The goal should be not to favor either side, but to improve the existing rules in such a way that traditional companies and Sharing Economy platforms can compete fairly. This can include the adjustment of the existing rules if they are – due to technological progress, for example – no longer appropriate. It can also include their enforcement if they do indeed capture the regulatory requirements of the market well. Voluntary standards that the Sharing Economy platforms agree upon do not resolve the conflict but carry the potential to create a competitive advantage for the new entrants that is essentially induced by the (often very strict) regulation of the traditional companies. Ideally, regulation in a market should be the same for all companies.

Multitude of framework conditions in the EU. Like any network, Sharing Economy platforms need a large user base in order to be able to scale up quickly and benefit from economies of scale that lower barriers to entry and hence make market entry possible (Shapiro/Varian, 1999). For Europe, creating a large user base is

particularly difficult due to two reasons: First of all, the 28 European Union member states have 24 official languages. In consequence, a large number of translations of the platforms' services are necessary in order to reach users across the continent. Secondly, there are different legal frameworks across Europe. A data protection legislation that provides legal certainty in a digitized world has not been passed yet, for instance. Scaling up therefore implies a huge bureaucratic and human-capital intensive burden for Sharing Economy platforms. This is a tremendous competitive disadvantage compared to the United States. There is not much that can be done about the different languages, but the legal framework should be defined in a way that it is similar, if not identical, across the EU member states. Besides data protection, this includes copyright, for example. In some cases, the existing rules need to be applied in a more appropriate way. One example is the Services Directive: If Sharing Economy platforms were defined as digital services, regulation at EU level – implying similar rules all over the EU – would be possible under this directive. Instead, a different classification, for example as transport services in case of Uber, leaves regulation to the member states. The result are higher costs of adhering to the regulation for Sharing Economy platforms and consequently higher expenditures for scaling up the business.

Insufficient funding. Similar to all online platforms, Sharing Economy platforms face relatively high fixed and hardly any variable costs. Because the risk associated with starting such a business is high, venture capital often is the only way of financing. The availability of venture capital in the EU is relatively scarce, however (Piegeler/Röhl, 2015). Supporting the availability of funding is crucial in order to maintain and to increase the competitiveness of the EU as a location for business.

5.2 Challenges to Suppliers in the Sharing Economy

Uncertainty about rights and obligations. Especially in cases where the suppliers are individuals, uncertainty about their obligations and rights arises. The less often suppliers are active and the less professionally they work, the more likely questions of data protection requirements or the compliance with health and safety standards become relevant. The challenge lies in informing suppliers about the existing framework for self-employed work. While adhering to the framework is every supplier's own responsibility, the Sharing Economy platform is accountable for ensuring the suppliers' attention to its users' rights. In the face of a platform's typical activities – being active in many countries with different frameworks – this is a complex task, even if it only involves making the relevant information public on its website. Still, to attract a large customer base, it is in every Sharing Economy platform's best interest to ensure that its suppliers do not violate their obligations. For

this reason, regulation is deemed only an emergency solution in case the market does not resolve this challenge on its own. It is indisputable, however, that independent of the relative size of a supplier – that is his level of activity in the Sharing Economy – consumer protection should always be taken into account.

Employment and social rights. Sharing Economy platforms and the increasing participation of suppliers have an impact on employment. Generally speaking, suppliers in the Sharing Economy are in many cases self-employed, often even as a second job besides an employed position. Some might use a Sharing Economy platform to offer the freelance work they offered via other channels before. They often work from home but might use offices or co-working spaces as well. The overall impact of these platforms on work and new or other forms of work than dependent employment cannot be easily determined. The Sharing Economy is very heterogeneous (Demary, 2015). That is why the effect may vary depending on the sector, on each case and sometimes even national employment laws. The implications of the Sharing Economy on the social rights of its suppliers are therefore not clear-cut. Commonly, suppliers in the Sharing Economy that are self-employed face the same challenges as the self-employed in traditional industries. They are consequently able to use the same support system in place. The details depend on the country, but in many cases, government-promoted counseling services are available, for example. They cover issues such as insurance and taxation as well as guidance on the legal structure (BA, 2015).

Undeclared work and taxation. Sharing Economy platforms allow and foster self-employed work. If suppliers do not take their obligations as self-employed providers seriously, this poses a challenge with respect to undeclared work and consequently taxation. A threshold dividing individuals occasionally sharing a good and professionals engaged in commercial activity is necessary. A homeowner sharing his house twice a year while on vacation should not carry the same obligations as one that rents out his property all year long, for example. A clear-cut definition of the relevant threshold is therefore necessary. With respect to the definition of commercial activities, an appropriate indicator would be revenue derived from participating in the Sharing Economy or the value-added tax paid on this revenue. It would be helpful if Sharing Economy platforms had to include a notice of this threshold on their website in order to ensure that individual suppliers are aware of their obligations.

5.3 Challenges to Consumers in the Sharing Economy

Uncertainty about rights and obligations. Sharing goods, services or knowledge online is a novelty for many consumers. In 2015, only between two and six per cent

of the population of the large European economies state that they have taken part in it (ING-DiBa, 2015). This can be paralleled by an uncertainty about their rights and obligations in the Sharing Economy. Although the terms and conditions of the business transactions facilitated by the Sharing Economy platforms should be an integral part of their website, consumers might still not read them. As mentioned above, strengthening the personal responsibility in the online world, starting in school, could be helpful in order to resolve this issue. A prominent display of the terms and conditions on the platforms' websites is a prerequisite for this.

Uncertainty about the quality of the good or service. Consumers using Sharing Economy platforms are constantly faced with the challenge of assessing the quality of the offered good or service. This is especially relevant in peer-to-peer transactions where individual suppliers seem hardly tangible even though they are as liable and responsible as firms supplying the good or service. Overall, this results in an insecurity for the consumer that can be mitigated by the platform by offering a reputation mechanism. The importance of such a rating system is even higher in the Sharing Economy than in online platforms overall (cf. section 3).

6. Policy Implications

Online platforms are a relatively new, but increasingly common form of digitized companies. While they pose specific challenges, they also carry the promise of being especially innovative businesses that can propel the European economy forward in its development and lead to further prosperity and growth. The analysis and discussion of the aspects of online platforms currently under debate yields the following implications for policy-makers, especially at the European level:

- **Encourage transparency of online platforms.**
In order to ensure the trustworthiness of online platforms, transparent as well as stable terms and conditions are important. One way to support startup companies in this respect is to offer easy-to-handle templates that fulfil the current EU data protection requirements.
- **Promote signals of quality.**
In order to overcome information asymmetries, believable signals of quality for online platforms might be useful. European policy-makers could endorse such a private quality seal for online platforms that strengthens trust in the businesses that it is awarded to. Possibly, regulation might be needed to guarantee the high standards necessary for such a seal to have the desired effect.

- **Strengthen awareness of personal responsibility.**
While it is essential to ensure that online platforms do not betray their users' trust in them, everyone's personal responsibility with respect to their online activities and behavior cannot be emphasized enough. Internet users become younger and younger. Activities to strengthen the awareness of this responsibility therefore need to start at a young age, possibly in school.
- **Level the playing field.**
The regulation of physical companies and online platforms often differs, be it with respect to telecommunication or Sharing Economy companies. Levelling the playing field is necessary to facilitate fair competition. Preferably, this entails a liberalization of markets although this depends on the market and the business models that occur in them.
- **Use a rule-of-reason approach for regulation.**
Online platforms raise issues that were not relevant before, like data portability. It is clear-cut that the regulatory framework needs some adjustment to the arising challenges. It is sensible, however, to use a rule-of-reason approach rather than a per-se regulation with respect to the portability of data. Also, while even in the digital age some location restrictions are useful, policy-makers should refrain from imposing extensively strict restrictions such as not to squash the emergence of new business models and companies.
- **Provide legal certainty quickly.**
Legal uncertainty reigns the current situation for many online platforms, mainly in the context of data protection. Policy-makers should therefore try to improve the situation quickly. This includes a fast negotiation of EU officials with their US counterparts about Safe Harbor II as well as the overdue finalization of the EU data protection legislation.

Online platforms are an increasingly important part of the European economy landscape. It is now the job of the European policy-makers to find a middle way: On the one hand, they need to make sure that online platforms will be able to continue contributing to the European economy and that innovation is fostered instead of stifled. On the other hand, policy-makers need to ensure that the framework for their business activities is fit for purpose and considers the interest of consumers.

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