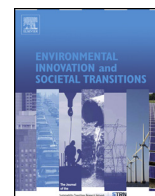




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Putting the sharing economy into perspective

Koen Frenken^{a,*}, Juliet Schor^b

^a Copernicus Institute of Sustainable Development, Utrecht University, The Netherlands

^b Boston College, United States

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ABSTRACT

We develop a conceptual framework that allows us to define the sharing economy and its close cousins and we understand its sudden rise from an economic-historic perspective. We then assess the sharing economy platforms in terms of the economic, social and environmental impacts. We end with reflections on current regulations and future alternatives, and suggest a number of future research questions.

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1. Introduction

In the Spring of 2014, the sharing economy held an unusual gathering in San Francisco, a sort of “coming out” party. Entitled “SHARE,” the conference included not only founders, funders and fans of the sharing economy, but also harsh critics. Politically progressive insiders and outsiders raised questions about access, exclusion and the distribution of value in the sector. They discussed their vision of a fairer, lower-carbon, more transparent, participatory and socially-connected economy, and whether those goals are consistent with the actions of the large, moneyed players—the successful platforms and the venture capitalists who are backing them with vast sums of finance. More recently, a key figure from the French sharing economy think tank OuiShare even stated at their annual conference in Paris that “the sharing economy is over” as it did not live up to its initial promises (De Grave, 2016).

It is clear that the sharing economy is creating enormous amounts of wealth, and that it has been using a socially-progressive feel-good rhetoric to do so. But will the platforms share that wealth with users—on both the provider and user sides of the market? Will the platforms ensure widespread access—by expanding their user base beyond the mostly white, highly educated, able-bodied urbanites who have comprised the bulk of users in the first stage? Will they make good on their promises to provide decent livelihoods for providers, opportunities for so-called “micro-entrepreneurs” and will they continue to provide real value to customers? Or is the rhetoric merely a thin veneer to hide a predatory business model that will ultimately appropriate value to investors and founders, once the market develops and users are locked into the platforms? Will the platforms behave like the monopolies that some seem poised to become? While it's too early for definitive answers to answer these questions, we believe it is crucial we start asking them in a more analytical, empirical and critical manner.

* Corresponding author.

E-mail address: k.frenken@uu.nl (K. Frenken).

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Our aim with this paper is to put the sharing economy into perspective by providing a conceptual framework that allows us to *define* the sharing economy and its close cousins and to *understand* its sudden rise from an economic-historic perspective (Section 2), to *assess* sharing economy platforms in terms of the economic, social and environmental impacts (Section 3), and to *reflect* on current regulations and possible alternative platform architectures (Section 4). We end with some research questions for future research (Section 5).

2. Definitional issues

There has been widespread ambiguity and even confusion about the term “sharing economy” among academics and the public alike. One reason is due to a common misconception about the sharing economy: its novelty. Participants in the sharing economy employ a discourse of trendiness, technological sophistication, progress and innovation. However, this characterization betrays both class and race myopia, as well as what historians call “presentism,” or blindness to the past. Humans have always shared. Sharing reproduces social relations and solidifies cultural practices (Belk, 2009). Furthermore, sharing is not just a relic of pre-modern societies. Carol Stack’s classic ethnography of the dense relations of reciprocity and interdependence among poor black urbanites in the U.S. showed how important sharing was to survival even a few decades ago (Stack, 1974). By contrast, Hochschild’s (2012) recent work on the growth of outsourced services among middle class whites suggests lower and declining levels of sharing. Thus, the claim that sharing is new ignores the higher levels of sharing that the working class, poor and communities of color have historically practiced and have partially maintained in the face of the growth of markets.

However, there is something new about the sharing economy, which one of us has called “stranger sharing” (Schor, 2014). Historically, although there are some exceptions, people tended not to share with strangers or those outside their social networks. Sharing was confined to trusted individuals such as family, friends and neighbours. Today’s sharing platforms facilitate sharing among people who do not know each other, and who lack friends or connections in common. Stranger sharing consequently entails a higher degree of risk, and for many of these platforms the situations are quite intimate—sharing one’s home or car, or eating food prepared by unknown cooks. The digital platforms are able to make stranger sharing less risky and more appealing because they source information on users via the use of ratings and reputations. Although there is a growing body of evidence that ratings are generally inflated and not very accurate (Overgoor et al., 2012; Zervas et al., 2015), rating systems have nevertheless been sufficient to entice large numbers of people to enter into novel, unknown situations.

It is also important to note the historical links between the sharing platforms and activity such as the collaborative software movement that harnesses the unpaid work of software engineers to write code and solve problems collectively (Benkler, 2004). The success of the open source movement paved the way for other kinds of peer produced content such as Wikipedia and citizen science (which is produced by massive numbers of volunteers) as well as shared online content such as file-sharing, video posting, music sharing. There is a strong historical and global connection between the emergence of peer-to-peer platforms and a widespread feeling that the new technology-enabled practices these platforms allow for, empower people (Benkler, 2006). This explains why file sharing, open source software, distributed computing, crowdfunding, p2p lending, bitcoin, and sometimes even social media, are quite often put under the umbrella term of the sharing economy.

To add to the confusion, some critics have argued that sharing by definition does not include financial remuneration (Belk, 2007). Indeed, this is a popular response to the use of the word sharing, when a more accurate term is “renting.” But a moment’s reflection suggests that the word is used in many cases where money is part of the arrangement, including cases such as sharing an apartment, or sharing the cost of a meal, or even the commonly used term “sharing expenses.” We talk about sharing in many contexts, such as sharing on social media, or sharing secrets, sharing experiences, or sharing friends. As such, there’s plausibility to using the term to denote a person renting out an asset such as a room, a car or a durable good. But it is certainly stretching the term beyond reasonable usage to say that paying a person \$8 to make a pizza delivery (as on Postmates) or a bit more to clean one’s house or put together Ikea furniture (as on Task Rabbit) has anything to do with “sharing”.

It should be obvious from the foregoing that the sharing economy tent has become quite capacious. Platforms want to be under the big tent of the ‘sharing economy,’ because of the positive symbolic value of sharing. Put differently, the confusion about the definition of the sharing economy is self-propelling due to the performativity of the term itself. From an academic point of view, there are two relatively easy routes to deal with the definitional issue. First, one chooses not to define and delineate the sharing economy but rather tries to understand why different actors attribute different meanings, and why such rhetoric tactics may or may not suit them. This is an interesting research question in itself that can be linked to the broader question of how innovations are shaped and framed by discursive practices, roles and positions. A second stance is to abandon the term altogether. This seems logical from an analytical point of view, but obstructs communication outside academia where the term may last for a long time and may even continue to gain in importance. Hence, in our opinion, the current confusion is an untenable state of affairs and the easy ways out do not solve the fundamental problem. If we are to ask questions about the entity called the sharing economy, we will be unable to come up with coherent answers if the object itself is incoherent.

Here we do not wish to disregard alternative definitions as these have been reviewed and discussed elsewhere (Puschmann and Alt, 2016). Rather, we want to put forward one particular definition that not only helps to define the sharing economy, but can also be used as an analytical tool to define closely related forms of economy which are often associated with sharing. We follow Frenken et al. (2015) and define the sharing economy as: *consumers granting each other*

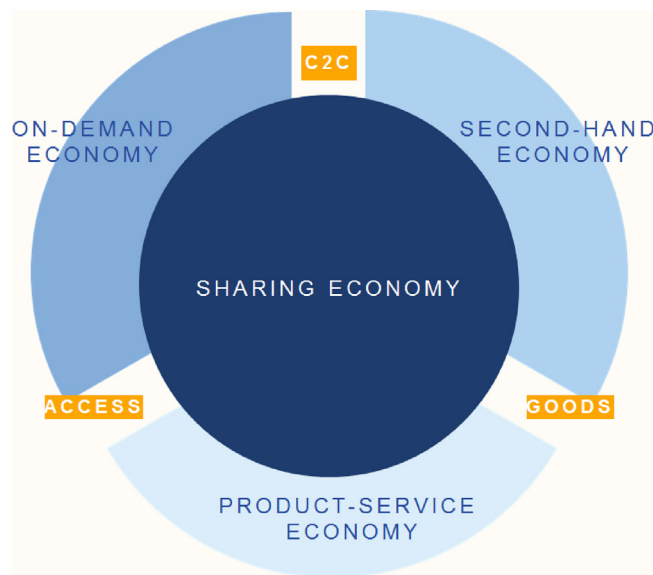


Fig. 1. Sharing economy and related forms of platform economy (from Frenken et al., 2015).

temporary access to under-utilized physical assets (“idle capacity”), possibly for money. Typical goods that are currently being shared are cars and homes. These are examples of what Benkler (2004) called “shareable goods”. In essence shareable goods are goods that by nature provide owners with excess capacity, providing the consumer with an opportunity to lend out or rent out their goods to other consumers. Excess capacity of a consumer good is present when the owner does not consume the product all the time. A majority of consumer goods can be understood as having excess capacity, including houses, cars, boats, houses, clothing, books, toys, appliances, tools, furniture, computers, etc. The few exceptions would include, for example, eyeglasses and mobile phones. Another dimension of excess capacity is the lumpiness of some goods. Many items can only be purchased with excess capacity such as the unused memory capacity of computers or the unused car seats for daily commuters.

The notion of sharing of idle capacity is central to the definition of sharing economy, because it distinguishes the practice of sharing of goods from the practice of on-demand personal services. There is a fundamental difference between ordering a taxi through Uber, Lyft or Didi and sharing a ride through BlaBlaCar or another hitchhiking or carpooling platform (Meelen and Frenken, 2015). In the case of a taxi service, the consumer creates new capacity by ordering a taxi on demand to drive the passenger from A to B. Without the order, the trip would not have been made in the first place. In this case, the term now coming into common use is the on-demand economy. By contrast, in the case of hitchhiking/carpooling, the consumer occupies a seat that would otherwise not have been used as the driver had planned to go from A to B anyway. Hitchhiking and carpooling are examples of ride-sharing and part of the sharing economy (Benkler, 2004). Indeed, in the context of transportation, this distinction between on-demand economy and sharing economy has become clearer over time as most commentators now call Uber, Lyft and Didi ride-hailing companies instead of ride-sharing.¹

The notion of under-utilization is also key to the current discussion about home sharing platforms such as Airbnb. When a house owner is away for holidays or a business trip, or has a spare bedroom, the asset is not utilized. That is, the unoccupied house can be considered as temporary idle capacity. If, however, a person were to buy a second home and rent it out to tourists permanently, that constitutes running a commercial lodging site, such as a B&B or hotel.

Based on this definition, the sharing economy can be distinguished from three other types of platforms that are sharing economy examples pre-dating the Internet. In Fig. 1, the sharing economy is placed in the centre as it adheres to the three defining characteristics: consumer-to-consumer interaction (c2c), temporary access and physical goods.

Consumers selling goods to each other is called the *second-hand economy*. This does not fall under the sharing economy as consumers grant each other permanent access, rather than temporary access to their goods. Large platforms intermediating such transactions are Ebay and Taobao. There are also platforms where people give away goods to each other, without

¹ Our distinction is also consonant with the Associated Press Stylebook, which started to describe the services of Uber and Lyft as ride-hailing from January 2015 onwards: “Ride-hailing services such as Uber and Lyft let people use smartphone apps to book and pay for a private car service or in some cases, a taxi. They may also be called ride-booking services. Do not use ride-sharing.” (Warzel, 2015). See also <http://www.yourdictionary.com/ride-hailing-service>. Also note that the distinction between ride-hailing and ridesharing is not just academic, but also carries legal implications. A judge in the Netherlands argued that Uber should be seen as a taxi service and refuted the claim by Uber that its UberPoP service (which is provided by unlicensed drivers) is to be viewed as carpooling (De Rechtspraak, 2014). Judges in Denmark, Finland and France came to the same conclusion (Skydsgaard, 2016).

payment (including Facebook groups). This would also fall under the category of consumers who grant another permanent access. Renting goods from a company rather than from another consumer we call the *product-service economy*. The service provided by the company consists of giving the consumer access to a product while the company retains ownership of it. Once the product has been used and returned, it becomes available again for another renter. An example is a car rental service such as Hertz. Finally, if we are dealing with p2p service delivery instead of p2p good sharing, the term *on-demand economy* is used. More recently, commentators in this context also tend to speak of the “gig economy”. The on-demand or gig economy includes purchasing personal services such as a ride, a handyman or a cooked meal.

The definition that we use for sharing economy platforms, and the three other types of platforms that can be distinguished from it, accommodates the notion of sharing as a historical practice. Before the arrival of Internet platforms, people were already lending or renting out goods to others. They shared with family and friends because were known and trusted social contacts. What is new is that users now also lend goods to strangers, because the Internet has enormously decreased transaction costs between unknown others. By transaction costs, economists mean all the costs and trouble incurred in making an economic transaction (Williamson, 1981). This refers especially to the costs related to search and arranging a contract. Among strangers, these were high before the advent of the Internet, as there was little information available about supply, reliability and contract forms (Benkler, 2004). This is one reason why sharing was generally limited to a circle of friends and family. As a result of Internet platforms, the costs of the search and the contract have become much lower. Consumers now find it much easier to locate goods and services they want, and transactions are regularized via standard contracts and online payment systems. In addition, on most sharing-economy platforms information on the past behaviour and therefore trustworthiness of users is elicited as a regular feature of transactions. This further lowers transaction costs and lowers risk.

3. Assessing the sharing economy

Early enthusiasm about the sharing economy, as reflected in the influential book by Botsman and Rogers (2010), was to a considerable extent driven by its expected sustainability impacts. Not only would consumers get cheap access to goods by renting or lending them from others, by doing so they would become less dependent on ownership. As a result, the total number of new goods produced was hypothesized to decline. This feeling was largely fuelled by the perceived environmental benefits of car sharing. As cars stand idle 95% of the time,² any type of sharing scheme that made cars accessible to non-owners would reduce the number of cars required for a given mileage level.

In addition to the environmental benefits, social benefits have also been claimed for the sharing economy. As we noted above, the advent of Internet platforms makes stranger sharing more desirable, thereby extending an existing practice to a larger social scale. On some platforms strangers meet face-to-face after a matching process, and from such face-to-face meetings new social ties are thought to emerge. Furthermore, sharing economy practices do not necessarily lead to stratification, since owners may be expected to differ in socio-demographic background from renters and borrowers. Possibly, with more expensive goods like cars and houses, providers may be richer and older than the renters on average. To the extent that sharing peers also create meaningful contacts, sharing practices increase social mixing.

The alleged sustainability benefits of the sharing economy are, however, much more complex than initially assumed. Following the people, planet, prosperity triple of sustainability impacts, we review them here in reverse order.

The direct economic effects of the sharing economy are indisputably positive. People who voluntarily enter into a transaction in the sharing economy only do so if it is beneficial to both parties. Even in the case of goods lending there is a benefit: there are few costs for the lender because the person did not need the product during the lending period, whereas the borrower gains access to the product without charge. The rise in income or consumer welfare can be understood as a direct consequence of lower transaction costs. Millions of transactions now take place that did not happen in the past, because the transaction costs involved in stranger sharing were simply too high (Benkler, 2004).

Yet, the full economic effects are far more complex. First, the rise of p2p sharing markets will have indirect effects on other markets. For example, legacy businesses and their workers in related markets are likely to experience lower earnings. One study found that hotel earnings in Texas declined significantly in places where Airbnb grew (Zervas et al., 2016). Further analysis also showed that the impacts were uneven across the industry, with lower-end hotels and hotels not catering to business travellers being the most affected. This indicates that Airbnb is a partial substitute for hotel nights, especially in the cheaper segments of the hotel market. The same effect may be expected in the market for car rentals which now face increased competition due to the rise of p2p carsharing platforms. There are also potentially effects on the supply and price of housing, if home sharing becomes more widespread. This would mean that residents see their rents go up in neighbourhoods where home sharing is popular.

Second, there are externalities as third parties may experience losses as the two parties transact. This is especially a problem with house sharing with neighbours experiencing nuisance and feelings of danger from strangers. Increasingly, neighbourhoods have attempted to stop the further growth of home sharing in tourist cities like Amsterdam, Barcelona, Berlin, New York and Paris. In response, municipalities are tightening their regulations towards home sharing platforms (Woolf, 2016).

² Bates and Lieblich (2012). For a further discussion on the available evidence, see Barter (2013).

Third, the distribution of increased income and welfare are likely to be uneven. Sharing economy websites are two-sided platforms characterized by strong network externalities, creating the tendency towards natural monopoly and allowing for high margins to be charged by the platform. Note here that ratings account for a significant part of the value of the platform. Even though the ratings are the products of platform users, the value generated is appropriated by the platform itself. The second group of people profiting most are owners of valuable assets. As consumers can more easily turn their consumer goods into capital assets to earn rents, and such valuable consumer goods are typically concentrated in a small group of well-off people, one can speak here of the Piketty-effect of the sharing economy (Piketty, 2013; Frenken, 2017). This is most evident in home sharing, but also applies to renting out parking spaces, cars and boats in times and places where such goods are scarce. Finally, as Schor (2017) has argued, on-demand platforms also seem sharing to be leading to increased inequality within the bottom 80% of the income distribution, as highly educated providers capture market opportunities like driving, cleaning and household tasks that were once the province of lower-educated blue and pink collar workers. Overall, while it is safe to say that participants in the sharing economy are experiencing increases in consumer welfare from lower prices and more variety, economic inequality driven by provider side dynamics is likely to increase as well.

The environmental effects associated with the sharing sector are also complex. Many platforms advertise themselves as green, and particularly as carbon-footprint reducing. It is also a common belief among participants that sharing is less resource intensive (Schor and Wengronowitz, 2017). Sharing is thought to be eco-friendly because it is assumed to reduce the demand for new goods or the construction of new facilities (in the case of hotels or shared spaces). Despite these widespread beliefs, there is not yet empirical evidence on these claims, apart from car sharing where substantial reductions in CO₂-emissions are realized (Chen and Kockelman, 2015; Nijland and Van Meerkerk, 2015). The standard argument on eco-impacts addresses substitutions among types of goods or services that have different technologies. This type of reasoning is what economists call partial-equilibrium analysis, which only looks at first round effects. To determine full carbon and eco-impacts it is also necessary to analyze all the changes that are set in motion in the system as a result of a new sharing practice (Schor, 2014; Frenken, 2017). For example, if the sale of a household's used items creates earnings that are then used to buy new goods ("rebound effect"), the original sale may not reduce carbon emissions or other environmental impacts. Another second round impact can occur if sharing practices shift income across classes, because eco-impact per dollar of expenditure varies by income class.

There is the additional question of macro-economic impacts. Many of the platforms are creating new markets that expand the volume of commerce and inject additional purchasing power into the economy. For carbon, there is a close association between GDP and emissions/footprint. Among high-income OECD countries, a 1% increase in GDP raises carbon emissions by between 0.64% and 1% depending on the carbon metric and the type of estimation technique (Knight and Schor, 2014). In the post-2009 period of shortfall in aggregate demand in the global North, new activities are more likely to expand demand, rather than substitute one kind of demand for another. Indeed, advocates of the sharing economy believe that it is creating economic opportunities in the wake of the 2009 downturn. The foregoing should make clear that the relation between the new sharing economy and carbon emissions and other ecological impacts is a complex one that can only be assessed with careful studies of particular effects. These studies are now long overdue.

Regarding the social benefits, there is a widespread "common good" claim by a number of platforms, as well as participants on both sides of the market which is the benefit of meeting people, making friends and getting to know others (Fitzmaurice et al., 2016). Schor (2015a) finds that the site that has been most successful at creating new social ties is Airbnb. Findings from one small interview study are that for half the Airbnb hosts social interaction was central to their motivation and practice on the site. These hosts socialized with their guests, ate with them, took them out, and in some cases became friends with them. A small group reported that they would host even if they had all the money they needed, and a few offered their homes on both Airbnb and Couchsurfing, for which they received no money. This finding is in line Böcker and Meelen (2016) who find that people who state that they are willing to share their home, often have social motivations next to economic ones. Ladegaard (2016), using a Boston area sample, further qualifies these results showing that socially-oriented hosts are eager to interact with foreign guests who are "comfortably exotic," i.e., different enough to be interesting, but similar enough to be comfortable.

Participants on other sites also note the importance of social ties. Schor (2015a) and Fitzmaurice et al. (2016) found that TaskRabbits say the platform helped them build new social networks they can rely on and afforded the opportunity to meet people they would have never met. They report satisfaction with the relations they developed with the people they do tasks for. This result is also in line with Parigi et al. (2013) who found, in a large scale study of the lodging site Couchsurfing, that participation resulted in new friendships. However, they found that the ability of the platform to create these connections, especially close ones, has declined since its inception in 2003 (Parigi and State, 2014). Users became "disenchanted" as the relationships they formed had become more casual and less durable. This study raises the question of whether the social benefits of sharing sites will continue as they become a less novel and more normative part of daily life. It seems that earlier adopters are more open to social connection and that as more people participate in the platforms for economic reasons, social interaction will decline.

The quality of ratings may also contribute to the declining importance of social contacts on sharing platforms. As participants acquire more ratings over time, trust is codified and there is less need for face-to-face interaction. This trend is reinforced by technological and business developments such as "smart locks" where the owner provides digital access to the rentier by a temporary pin code and businesses that provide additional supporting services including check-in and key handover.

It is also possible that sharing platforms may be harmful to social cohesion as reflected in existing social ties. Platforms economize private things in the sense that at any time these stand idle, an opportunity cost arises. This in itself does not affect social relations. However, while idle capacity was generally available to family and friends for free in the past, researchers and commentators have expressed concern about the viability of non-monetized sharing within networks as people prefer earning money (Belk, 2014; Schor, 2015b). Standard economic analysis suggests this will happen, although does not offer a prediction on how large this effect will be. There is only anecdotal evidence on this issue at the moment. For example, one Airbnb host said he will now require his friends and relatives to transact with him via the platform, to insure against damage to his apartment and possessions (Ravenelle, 2016). Another host reported being unhappy about having her in-laws stay for an extended period because of the money she lost (Schor, 2015b). In these studies, however, the prevalence of crowding out of altruistic sharing thus far appears to be low.

Furthermore, the peer-to-peer nature of sharing economy transactions may also increase peer-to-peer discrimination. One analysis of Airbnb in the United States found that male Afro-American Airbnb earn 12% less rent than other hosts for the same type of house in the same type of location (Edelman and Luca, 2014). A follow-up field experiment found that African-American guests are more frequently turned down by hosts (Edelman et al., 2015), prompting widespread reporting on social media of discriminatory experiences (#Airbnbwhileblack), the establishment of a Black-oriented platform (Noirbnb) and policy changes by Airbnb. A more recent analysis of more than 200,000 Airbnb listings across the U.S. found evidence of significant racial disadvantage in ratings, reviews, and prices charged (Cansoy and Schor, 2017). Furthermore, recent experiments suggest that Uber and Lyft chauffeurs discriminate against Afro-Americans in terms of longer average waiting times and more frequent cancellations (Ge et al., 2016). More generally, there are indications that people engage in a variety of exclusionary behaviors in their choice of trading partners or collaborators in the sharing economy (Schor et al., 2016).

In all, the economic, social and environmental effects of sharing economy platforms are largely unknown. While the direct economic benefits are obvious from the large volume of monetary transactions taking place, the distributional effects may be quite skewed. Since the bulk of revenue in the sharing economy (as defined) accrues via home sharing, already well-off home owners will profit most. Environmental benefits mostly lie in car and ridesharing, and the overall effects of sharing economy platforms may be small due to rebound effects. Finally, social effects are complex and not necessarily inclusive.

4. Alternatives

Despite the call for scientific assessments of the sustainability impacts of sharing economy platforms, we should acknowledge that the precise impacts are likely to remain unclear for a long time to come. The reason for the lasting gap in our knowledge is not only theoretical, but also empirical. For a proper assessment of the impacts, access to the user data currently held by platforms is key. However, the platforms have been restrictive and selective in granting researchers access to their user data, citing privacy and competition concerns. Instead, platforms release their own research results (e.g., Airbnb, 2014), which tend to emphasize the direct benefits without much consideration of the more complex and indirect effects just discussed.

In this context, it has been noted that the social process of assessing the desirability of sharing platforms follows a reverse logic. Frenken (2016) speaks of “reverse technology assessment” in this context. In many countries, established sectors like food, drugs, transportation, construction, and children’s toys are subject to detailed scientific analysis and normative deliberation before new products are allowed to enter the market. Sharing economy platforms, by contrast, are introduced onto the market without consultation, and due to their fast growth they prompt ad-hoc government action without much evidentiary basis. This reverse process has advantages, as users “vote with their feet” and provide individual platforms with practical legitimacy. However, these users are likely to be less affected by externalities and second and third round effects. Given the recent backlash and opposition to particular platforms from various social groups, more systematic evidence is needed to resolve the current debate, with more room for nuanced opinions by independent actors (e.g., academics, journalists, consumer organizations, etc.).

Restricted access to user data also hampers the enforcement of regulations and, consequently, policy evaluation. Though the advent of sharing-economy platforms is recent, the volume of activity on some of these platforms is already sizeable and still growing exponentially. Understandably, calls for regulations are getting louder given the negative externalities caused by home sharing and unfair competition between platform and traditional operators in sectors like tourism, restaurants, short-stay, transport, and appliances. What is more, there is reason to assume that many avoid paying taxes or are not even aware that taxes should be paid for some activities (especially home sharing).

The typical response of regulators has been to create institutional boundaries between the sharing economy and the regular economy by putting a cap on a sharing activity. For example, an increasing number of cities allow home sharing for a fixed number of days (e.g., 30, 60 or 90 days). This “cap” logic can be applied to operators of home restaurants and owners of boats, campers, and parking spaces. The principle of a cap is consistent with our definition of sharing economy as consumers who grant each other temporary access to their under-utilized goods, as it avoids cases where people purchase goods or houses for the purpose of renting them out on a permanent basis. With caps, governments solve two problems at once because they meet the incumbent businesses halfway by creating clear boundaries between professional providers and incidental providers, and they “solve” the tax avoidance practice by users pragmatically as the sums gained by incidental providers are small enough that they can be ignored or otherwise fall under existing tax exemption levels (except for home sharing where revenues are quite skewed and the foregone tax revenues are sizeable). This logic of containment is sustainable

as long as the caps can be effectively monitored. Currently, however, governments struggle to enforce such rules, since the platforms do not give them access to user data as they are protected under current privacy laws, while alternative ways of monitoring do not outweigh the costs involved. The government, thus, follows a cap logic which may turn out to be hard to enforce in practice. In all, current governmental institutions have not yet come up with an adequate and credible response to the concerns of incumbent business interests and the unions.

Against this background, it is not surprising that to see various alternative platforms being founded. Serious experiments are emerging ranging from cooperative-based and crowdfunded platforms to platforms that make use of alternative currencies or more novel block-chain technology (Scholz, 2014; Scholz and Schneider, 2016). At the same time, some of the existing commercial platforms are now changing the ways in which they engage with users and governments, and are looking for workarounds to help with enforcement their regulations.

From an economic-historical point of view, the possibilities for a fully socialized sharing sector, with platforms owned and governed by their users is an intriguing option. If users are able to construct and use their own platforms on a large-scale basis, they may benefit equally from network externalities without having to pay the 10–20% margins typically charged by commercial platforms. Furthermore, users would retain control of their user data. Whether users, other than current commercial platforms, would be willing to share (some of) the data with governments for enforcement purposes and with scientists and the wider public for research purposes, remains an open question.

More generally, the initial fear that platforms may naturally grow into monopolies as has happened with search engine and social media platforms may turn out to be ill-founded. Sharing markets are local markets given the transport cost involved in sharing one's goods (the exceptions being the markets for home sharing and long-distance carpooling). Hence, the critical mass that is needed to successfully launch a new platform is much smaller in local markets than in global markets. This means that with limited network externalities, there is scope for alternative platforms. Furthermore, the key assets of platforms lose their value over time as platform software has become ubiquitous, and risk management is integrated into standard insurance policies. Users may also become increasingly aware of the limited information value of specific platform ratings as they become more experienced practitioners themselves. This does not mean that attracting a critical mass of users to alternative platforms is easy. However, switching costs may go down as ratings become more easily transferable legally (as with mobile telephone numbers) or technologically (by centralizing one's ratings across platform on a single site). Furthermore, given the low levels of effort required to become active on any platform, users may become active on competing platforms at the same time. A challenge for alternative platforms will be to align to interests and ideologies of its founders, volunteers and users. Indeed, as previous research suggests (Schor et al., 2016), when economic motives are largely absent, participants may seek social status at the expense of others, making collective action and professionalization of the platform more difficult.

5. A research agenda

From our discussion of the delineation of the sharing economy from other platform economies, and our assessment of its impacts and alternatives, we distill a number of research questions. These questions focus on the varieties of platforms in terms of their governance, scalability and impacts.³

1. What types of sharing economies have historically existed across cultures and epochs, and what can we learn from the economics, governance and impacts of such initiatives and practices in the light of current day sharing economy platforms?
2. What is the relative importance of trust-generating mechanisms on sharing economy platforms, including past ratings, personal identification, online communication and extra-platform reputational capital?
3. How can we analytically conceptualize and empirically assess the various impacts of the current sharing economy platforms in terms of people, planet and prosperity? To what extent can we carry out such assessment without access to user data?
4. How can we explain and evaluate the variety of regulatory responses of governments at local, national and supra-national levels as well as the modes of self-governance employed by platforms?
5. What alternative governance schemes for operating a platform are currently being employed? How can we explain their emergence, growth and relative success across sectors, territories and social groups?

Finding answers to these questions will be a challenging endeavour. It will require a range of disciplinary perspectives and methodological approaches and a close eye for historical contexts and geographical specificities. Despite the strong rhetoric of proponents and critics alike, the future of the sharing economy is fundamentally open and contingent. In this, clearly, academics have their role to play.

³ There are, of course, many other important questions, for example, related to motivations to participate on platforms, the matching process on platforms and the substitutability of sharing economy services vis-à-vis traditional service operations. These fall outside the scope of the current paper.

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