Reverse Technology Assessment in the Age of the Platform Economy

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The rise of what is often referred to as the sharing economy is among the most daring challenges for cities around the world. Sharing platforms create opportunities for efficient market exchange, but also cause negative externalities for city dwellers. A challenge for city authorities is that platforms can be launched without ex ante assessment of externalities and public interests, leaving public debate and political deliberation ex post affairs. We call the platform innovation logic 'reverse technology assessment', which obstructs participatory planning and constructive technology assessment. We discuss the potential of an alternative policy framework known as 'right to challenge'. We end with a broader reflection on public policy regarding sharing platforms at different scalar levels, emphasizing local initiatives to develop alternative sharing platforms.

The rise of sharing platforms is among the most daring challenges for cities around the world. Using online platforms, many residents rent out their spare rooms, houses, gardens, cars and motorcycles and provide taxi and delivery services using their own cars or bicycles. With consumer assets being used more efficiently, urbanites may economize on hotels, car rentals and parking spaces. Indeed, the concentration of sharing-economy transactions in large cities can be understood from the relative scarcity of housing, cars, and parking spaces in larger cities compared to smaller ones.

However, the advent of the online sharing economy has proved to be a mixed blessing (Kenney and Zysman, 2016; Frenken and Schor, 2017). While positive environmental sustainability impacts may well be sizeable, serious concerns have arisen about growing inequalities as U.S. studies have shown that while homeowners who rent out their homes see their income rise, house prices rise for the whole neighbourhood (Lee, 2016; Horn and Merante, 2017; Barron *et al.*, 2018). What is more, sharing practices may cause serious negative externalities to third parties, especially to neighbours suffering from nuisance and feelings of unsafety, as was reported in Amsterdam (Frenken *et al.*, 2019). Moreover, incumbent businesses like hotels and car rental companies claim that platforms facilitate unfair competition and call for a level playing field.

As online platforms grow so fast – especially in large cities with a lot of tourists such as Amsterdam, Barcelona, London, New York, Paris and Seoul – local authorities are taken by surprise. They have to deal with a rapidly growing practice among their citizens who often ignore the local and sectoral regulations that professional providers (hotels, restaurants, bike rentals, car rentals, taxi companies, etc.) generally do adhere to. Enforcement of extant regulations that apply to professional suppliers is difficult given the unwillingness of platforms to share their data with local authorities. Instead, as Codagnone *et al.* (2016)

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suggest, alternative policy options may be considered, ranging from strict regulation to deregulation. Yet, each of these policy options may run against public interests without a proper assessment of the local impacts of sharing practices.

'Reverse Technology Assessment'

Sharing involves a voluntary exchange by two parties, raising welfare on both sides (win-win). For example, people who rent out their private car make some extra money, while the person who rents it gets a car at a lower price compared to a professional rental agency. On top of the direct economic benefits, strangers may meet in person with possible communal benefits as social capital would increase (Parigi *et al.*, 2013; Acquier *et al.*, 2017). In addition, especially with car sharing and ride sharing, substantial sustainability benefits have been documented (for an overview, see Frenken, 2017).

However, the precise direct and indirect effects of sharing economy platforms are likely to remain unclear for a long time to come. For a proper scientific assessment of the impacts of online platforms, as in a classic technology assessment, access to the user data currently held by platforms is key. Platforms such as Airbnb and Uber have shown to be unwilling to grant researchers and authorities access to their user data, citing privacy and competition concerns. To the extent that scientific research is carried out on the basis of platform data – be it commissioned or not – the data are only disclosed to a single research team making proper peer review and replication impossible.

This impasse created a logic, which can be described as 'reverse technology assessment' (Frenken and Schor, 2017). While innovations in mature sectors like food, drugs, transportation, construction, and children's toys are subject to detailed scientific analysis and normative deliberation before firms are allowed to introduce these on the market, sharing economy platforms, as an innovation, have

not been subject to such an analysis. This is in part due to the specific nature of apps, which can be distributed at very low cost given the widespread use of smart phones. Using this infrastructure, people simply download apps and start using these, without any opportunity for government intervention. As a result, the desirability of new apps – here sharing platforms – can only be assessed *ex post*.

One might argue that *ex post* technology assessment is preferable over *ex ante* assessment as the effects of a new platform would be hard to predict. What is more, most platforms fail to reach any critical mass. Hence, *ex ante* assessment would be rather costly given that most platform innovation fails anyway. That said, the *ex post* assessment of platforms after they reach a critical mass of users is frustrated by the difficulty to estimate economic, social, environmental and spatial impacts without the user data appropriated and kept secret by platforms. And, even to the extent that tentative assessment can be made on the basis of historical and/or aggregate datasets, or by collecting alternative data, the fact that raw data do not underlie the investigation is unlikely to pacify conflict and public debate, and may even only boost the mistrust of those negatively affected.

While this lack of data hampers the opportunities of authorities to respond, it is arguably also detrimental to urban democracy. As Stirling (2008) asserts, technology assessment should be a careful and deliberative process which is opened up to different voices and ideas. In a process of reversed technology assessment residents are often faced with a situation that is difficult to change, rather than having the opportunity to engage in the future of their city or neighbourhood. In a similar vein, if urban planning is seen as a process of 'knowledge claim testing' (Rydin, 2007), reversed technology assessment limits both the procedural room to engage in debate as well as the substantial room to discuss the validity of knowledge claims because insight into impact on the city is limited.

The call for quantitative data from sharing platforms to inform the public and policy-makers may thus seem understandable and desirable. At the same time, however, a more data-driven governance logic may possibly de-politicize urban injustices (Shelton, 2017). Moreover, one may also cast doubts on whether transparency will lead to accountability as the assumptions in the algorithm steering the platform may remain hidden and unproblematized (Kroll *et al*., 2016). Effective technology assessment *ex post* can thus only function if political agreements about platform algorithms are made.

In sum, traditional constructive technology assessment and participatory planning approaches face serious limitations in dealing with sharing platforms. Moreover, there are many nuances and trade-offs regarding the ways in which data about the platforms are made accessible. One approach highlighted in the Dutch context, which might be suited to appreciate both the characteristics of platforms and safeguard public interests, is that of 'right to challenge'.

Right to Challenge

A classic response to the current impasse regarding data sharing between platforms and authorities could be to give out licences to platforms conditional on data sharing with local authorities, overseen by an independent third party. However, as platforms can be run from outside a territory, such a licence system would be hard to implement in practice. In addition, the privacy law may still prevent local authorities from making use of such data in many contexts. Finally, the data on their own will be insufficient to perform an impact assessment, let alone a public debate, as long as the algorithms and classification systems used by the platform are not being disclosed. Hence, data output may still be unclear, manipulated or contested, providing a shaky basis for technology assessment.

The balancing act for local authorities will be to get into a collaborative constellation with platforms in ways that they are willing to disclose data and further details required to make use of data for assessment purposes. In doing so, the challenge for governments is not to frustrate innovation at a too early stage while simultaneously to facilitate an open and transparent assessment process in which different public values are taken into account. In this context, the Dutch Ministry of Economic Affairs (2015) advocated a new policy framework for dealing with platforms under the title 'future-proof legislation'. The Ministry argues that when platform innovations emerge in future, government should in principle tolerate a new platform, but at the same time start systematic learning processes so as to be able to assess its impacts. To this end, the Ministry wants to limit technology-specific regulations so as to give more room for innovations.

A specific instrument, already in use in the context of the Dutch Building Decree, is called the Right to Challenge (RTC),[1] which gives citizens and companies a legal possibility to achieve the *goal* of a regulation in its own way without complying with all the statutory rules. Such an exemption is granted for a limited period of time and concluded with an evaluation to assess whether the goal of a regulation has indeed been achieved in this new setting. Granting a party a right to challenge remains a political decision which must be based, case-by-case, on a weighing up of the (potential) importance of an innovation and other public interests, including the risk that parties will later prove incapable of achieving the goals of existing legislation in their own way (Frenken *et al*., 2019). Furthermore, the costs of evaluation and oversight ensuing from the Right to Challenge processes should not exceed the expected benefits from the experiment.

Regarding sharing platforms, the Ministry of Economic Affairs (2015) suggested that ratings and reviews may be sufficiently effective in filtering quality that consumers would remain protected if formal product and service regulation were abandoned. Following this reasoning, some steps were undertaken to investigate

whether the home restaurant platform ShareDnD[2] (previously called Airdnd) could be granted a right to challenge, as reviews may be sufficient to warrant the food safety of meals provided. Yet, the process did not result in a formal right to challenge framework, in part because the platform itself did not see the need to do so.

While the Ministry presented the Right to Challenge as part of its national innovation policy, it is obviously also a possible framework for local governments. In particular in the context of sharing-economy platforms, local governments are the main regulator given their responsibilities regarding housing, transport and parking, and local order as well as planning more generally. Yet, while the principles underlying the Right to Challenge could work well in certain sectors such as construction, it is questionable whether they are feasible with the existing online sharing platforms. One of the requirements of a Right to Challenge holds that the goal must be clearly objectifiable and measurable. That requirement seems at odds with the typical attitude taken by platforms up to now in refusing government access to data so as to protect the privacy of users. The question therefore is whether the existing impasse surrounding access to data can be resolved. If a Right to Challenge process is indeed only feasible if the platforms provide the data needed to make the impact objectifiable and measurable, a system of supervision will probably have to be established, possibly in the form of a trusted third party, to verify that the platform has provided correct, objective data. That then raises the question of whether the supervisory costs weigh up against the returns from the innovation, especially given the fact that most platforms fail to make profit and are bound to disappear again.

Finally, the application of the Right to Challenge principle in a context of platform innovation is further complicated by the nature of innovation. As the effects of a platform innovation are hard to judge beforehand, the public values that may be affected by the innovation may be elusive, and complex trade-offs between such values only become apparent over time. For instance, Uber often claimed that reviews protect consumers by providing an incentive for drivers to deliver a good service. This may be an argument to deregulate taxi laws and licence requirements that were primarily aimed at safeguarding consumer safety (Frenken *et al.*, 2019). Yet, deregulation in turn will spur taxi use and, possibly, car congestion and pollution, jeopardizing public health and bicycle safety. Likewise, city regulations that allow homeowners to rent out their homes to tourists up to a certain maximum period, as pioneered by the Amsterdam municipality which introduced the 60 days maximum back in 2014 (Frenken *et al.*, 2019), aimed to strike a balance between the economic freedom of individual homeowners and zoning laws distinguishing between residential and commercial exploitation. Yet, as tourism grew, in part, due to the legalization of home sharing, serious concerns have arisen regarding nuisance and rising house prices in the neighbourhoods most affected by Airbnb.

Reflection

With sharing platforms increasing and their impacts being debated, local governments need systematic assessments of the pros and cons of platforms, both in order to choose a course of responsive action and to facilitate a well-informed public debate. A key issue here is timing. An early assessment of a platform may well be embraced by a platform to receive free publicity and gain legitimacy with multiple stakeholders (Mair and Reischauer, 2017). However, such an assessment will be of little help as data are few and indirect effects are hard to assess. The cost of such assessment is likely to be judged too high as compared to public need for information. Any time later, however, a platform may have become so successful in a short time that it can allow itself a non-cooperative stance by refusing to share data or to change its practices. In such cases the public will call

for systematic assessment, while the platform no longer has an incentive to be scrutinized.

A possible in-between option can be to grant any platform a license to operate, but with a legal agreement that data on all transactions, including reviews, need to be stored and made available if a platform grows bigger. Access, then, should be to any independent researchers in ways that allow impact assessment without jeopardizing the individual privacy of users or the competitive concerns of the platform. Providing data to multiple researchers allows peer reviewing following academic standards which is expected to raise the trust in results by the general public. By making public scrutiny of platforms conditional upon size, one can still follow the logic of Right to Challenge while avoiding the excessive costs involved in researching any platform, big or small. What is more, the possible negative publicity that may result from an assessment is easier to bear for larger platforms than smaller ones.

With regard to the involvement of the public in the assessment of platforms, more radical forms of public participation could be explored as well. In the United Kingdom, for example, the Right to Challenge does not refer to challenging regulations, but to challenging the one who provides a public service (Jones and Ormston, 2014). Under the Localism Act, residents from a neighbourhood are allowed to take over services if they think they can do better. These services are typically provided by governments or semi-governmental institutions, such as public transit or picking up the trash. While there are serious democratic risks to this approach (Clarke and Cochrane, 2013), such as hollowing out of service provision or a competition between government and its citizens, it also has potential to develop a form of participation that is based on citizen ownership of a platform – also known as 'Platform Cooperativism' (Scholz, 2016) – rather than just voicing opinions and voting at elections.

Moreover, in principle, cooperative ownership structures could be extended to compete with privatized service provision. For instance, the Amsterdam-based initiative Fairbnb proposes a form of 'community-powered tourism' as an alternative to the Airbnb platform. Such examples might counter or alleviate what Zuboff (2016) has dubbed 'surveillance capitalism', wherein knowledge asymmetry is a key economic driver for tech companies that – ultimately – challenges democratic values. However, to date, we have witnessed very few successful examples of social enterprises and platform coops, which begs the question as to what renders such alternative platforms successful and how (local) policy can empower such initiatives.

More generally, localized forms of sharing and their governance through platforms would question the logic of global scalability of platforms rooted in Silicon Valley (Kenney and Zysman, 2016). Indeed, sharing and gig platforms mostly enable local exchange, generating local benefits and externalities. Within the context of the European Union, then, such a localized turn to platform governance would fit the subsidiarity principles underlying the Union. Locally rooted platforms would also open up new ways to leverage the potential benefits of platforms in city planning, for example, when building low-car neighbourhoods (combined with community car sharing) or social housing (combined with home sharing), without being dependent on global platforms that favour uniformity in regulation over local adjustments.

NOTES

1. Note that this is not the same as the Right to Challenge as it is deployed in the UK, which is part of the Localism Act; see: https://mycommun ity.org.uk/help-centre/resources/local-services/ community-right-challenge/.

2. This platform allows homeowners to act as 'hobby chefs' providing paying guests with a dinner. The platform organizes an online marketplace where hobby chefs offer their menus and guests can reserve a seat at the table. Payment is also completed through the platform, with the platform taking a commission for every reserva-

tion and allowing guests to leave reviews afterwards.

REFERENCES

Acquier, A., Daudigeos, T. and Pinkse, J. (2017) Promises and paradoxes of the sharing economy: an organizing framework. *Technological Forecasting and Social Change*, **125**, pp. 1–10.

Barron, K., Kung, E. and Proserpio, D. (2018) The sharing economy and housing affordability: evidence from Airbnb (March 29). Available at: SSRN: https://ssrn.com/abstract=3006832.

Clarke, N. and Cochrane, A. (2013) Geographies and politics of localism: the localism of the United Kingdom's coalition government. *Political Geography*, **34**, pp. 10–23.

Codagnone, C., Biagi, F. and Abadie, F. (2016) *The Passions and the Interests. Unpacking the 'Sharing Economy'. JRC Science for policy report*. Institute for Prospective Technological Studies (EUR 27914 EN) doi:10.2791/474555.

Frenken, K. (2017) Political economies and environmental futures for the sharing economy. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **375** (2095), open access.

Frenken, K. and Schor, J. (2017) Putting the sharing economy into perspective. *Environmental Innovation and Societal Transitions*, **23**, pp. 3–10.

Frenken, K., Van Waes, A., Pelzer, P., Smink, M. and Van Est, R. (2019) Safeguarding public interests in platform economy. *Policy & Internet*, open access. doi:10.1002/poi3.217.

Horn, K. and Merante, M. (2017) Is home sharing driving up rents? Evidence from Airbnb in Boston. *Journal of Housing Economics*, **38**(C), pp. 14–24.

Jones, T. and Ormston, C. (2014) Localism and accountability in a post-collaborative era: where does it leave the community Right to Challenge? *Local Government Studies*, **40**, pp. 141–161.

Kenney, M. and Zysman, J. (2016) The rise of the platform economy. *Issues in Science and Technology*, **32**(3), pp. 61–69.

Kroll, J.A., Barocas, S., Felten, E.W., Reidenberg, J.R., Robinson, D.G. and Yu, H. (2016) Accountable algorithms. *University of Pennsylvania Law Review*, **165**(633), pp. 633–705.

Lee, D. (2016) How Airbnb short-term rentals exacerbate Los Angeles's affordable housing crisis: analysis and policy recommendations. *Harvard Law & Policy Review*, **10**, pp. 229–254.

Mair, J. and Reischauer, G. (2017) Capturing the dynamics of the sharing economy: institutional research on the plural forms and practices of sharing economy organizations. *Technological Forecasting and Social Change*, 125, pp. 11–20.

Ministry of Economic Affairs (2015) *Ruimte voor vernieuwing door toekomstbestendige wet- en regelgeving* (AEP / 15079841). ('Room for novelty through future-proof law and regulation', in Dutch). The Hague: Ministry of Economic Affairs.

Parigi, P., State, B., Dakhlallah, D., Corten, R. and Cook, K. (2013) A community of strangers: the dis-embedding of social ties. *PLoS One*, **8**(7), p. e67388.

Rydin, Y. (2007) Re-examining the role of knowledge within planning theory. *Planning Theory*, **6**(1), pp. 52–68.

Scholz, T. (2016) *Platform Cooperativism: Challenging the Corporate Sharing Economy*. New York: Rosa Luxemburg Stiftung.

Shelton, T. (2017) The urban geographical imagination in the age of Big Data. *Big Data & Society*, **4**(1), pp. 1–14.

Stirling, A. (2008) 'Opening up' and 'closing down' power, participation, and pluralism in the social appraisal of technology. *Science, Technology, & Human Values*, **33**(2), pp. 262–294.

Zuboff, S. (2015) Big other: surveillance capitalism and the prospects of an information civilization. *Journal of Information Technology*, **30**(1), pp. 75–89.