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an interdisciplinary research agenda

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Published online: 02 Apr 2019.

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Governing crowd-based innovations: an interdisciplinary research agenda

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ABSTRACT

The crowd increasingly plays a key role in facilitating innovations in a variety of sectors, spurred on by IT-developments and the concomitant increase in connectivity. Initiatives in this direction, captured under the umbrella-term 'crowd-based innovations' (CBI), offer novel opportunities in all domains of society by increasing the access, reach and speed of services and goods. At the same time, they signify important challenges because these innovations occur in a context of traditional, well-established institutional arrangements. CBI create an 'institutional void': existing rules, standards and practices are challenged and renegotiated. This raises questions about the safeguarding of public values such as quality, legitimacy, efficiency and governance of crowd-based innovations. The objective of this perspective piece is to present an interdisciplinary research agenda to address normative challenges for governing CBI. We will argue that such an agenda needs an integrated empirical-normative approach. We will detail three lines of empirical-normative research that together build up towards an interdisciplinary agenda.

Introduction

We are witnessing the emergence of crowd-based platforms for the production, exchange and delivery of goods and services throughout all domains of society – from energy to logistics, from food to finance, and from science to wellness (e.g. www. crowdcompanies.com). Platforms typically decrease transaction costs and enable new peer-to-peer or peer-to-business interactions (Codagnone, Biagi, and Abadie 2016). Such platforms can be regarded as social innovations, as they allow for new or enhanced social relations in product or service systems (Schor 2014; Turker and Altuntas Vural 2017). They have been described under labels such as sharing economy (e.g. Frenken and Schor 2017), gig economy (Lao 2017; Sargeant 2017), platform economy (e.g. Fabo, Karanovic, and Dukova 2017) platform society (Van Dijck, Poell, and de Waal 2018),

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or collaborative economy (e.g. Kostakis and Bauwens 2014). We use the term '*crowd-based innovation*' (CBI) here as an umbrella term. CBI is defined as social innovations that use digital platforms to allow for the active engagement of a large group of individuals in the production, exchange or delivery of goods or services (knowledge, money, assets, etc). These crowds can be self-organised (e.g. crowd-funding) or activated through a principal (a company, government or other organization; e.g. citizen science or Uber).

The umbrella term CBI emphasizes the promise of empowering 'the crowd', which seems to underlie the development of such platforms. Indeed, CBIs hold the potential for more efficient and inclusive modes of production and delivery of goods and services. This is reflected in the emerging literature on CBIs which highlights the potential benefits of CBIs and focuses on how to speed up their growth, usability and viability, both from a technical and managerial perspective (Boudreau and Lakhani 2013; Chan, Dang, and Dow 2016; Geiger et al. 2012; Mair and Reischauer 2017; Sundararajan 2016; Sutherland and Jarrahi 2018; Van Waes et al. 2018). Yet at the same time, with the rapid growth of CBIs, also some of the risks and downsides are becoming apparent. Most obvious examples here are platforms such as Airbnb and Uber. Even though these platforms depict themselves as technology platforms and not as service providers or employers, it is clear that they have a severe impact on the public domain (although Fisher (2017) is hopeful that also the tech community is becoming aware of that). These platforms impact the public domain by facilitating access to services for larger groups of people. However, the adverse impacts on the public domain are also becoming apparent. Think of the discussions around labor conditions of platforms such as Uber and Mechanical Turk (Berinsky, Huber, and Lenz 2012; Mason and Suri 2012). In New York, Airbnb led to problems on the rental housing market, because after its introduction rental prices increased and houses were removed from the rental market. Also in Amsterdam, residents experienced a negative impact of Airbnb on social cohesion and liveability in neighbourhoods. It is clear that private platform initiatives can have a severe impact on the public domain. Through the particular ways in which platforms connect supply and demand, digital platforms increasingly control the organisation of society (Van Dijck, Poell, and de Waal 2018). The fact that for many platforms the algorithms that are used to connect supply and demand are opaque makes a responsible innovation perspective on CBIs even more urgent. Recently, more calls have been made for research on the social impacts of CBIs (e.g. Dreyer et al. 2017; Erickson and Sørensen 2016; Frenken and Schor 2017).

We want to contribute to this emerging literature by laying out a research agenda on CBIs based on an interdisciplinary approach to study normative challenges for governing CBIs. We will argue that an integrated empirical-normative approach is needed to foster responsible innovation of/with platforms engaging the crowd. We do so by starting from the observation that CBIs challenge institutions and thereby raise questions about safeguarding public values. Following that, we will detail three lines of empirical-normative research to support responsible innovation of CBIs.

Crowd-based innovation, institutional void and public values

CBIs, at least those that are of interest to our argument, challenge the boundaries between institutional domains and institutional roles. Are labor platforms for instance employers, and therefore responsible for labor conditions, or do they just facilitate transactions? Are

people who frequently rent their house to strangers sharing their private house or running a hotel and therefor subject to the taxes and regulations that govern the hotel industry? CBIs do not take place in a vacuum, but are introduced in a domain of society that is characterized by complex institutional arrangements (e.g. in the energy domain, labor domain etc). Formal and informal rules and regulations, a certain distribution of roles and responsibilities, routines, market mechanisms, supervision and enforcement all combine to form such an institutional arrangement. CBIs challenge these institutional arrangements, in the sense that they do not fit or align with the institutions in place. In other words, CBIs create an '*institutional void*' (Hajer 2003), which means that generally accepted rules and norms for the CBI are not (yet) in place.

Institutional voids are typified by struggles over how to safeguard public values such as accountability, welfare, legitimacy, efficiency and fairness. In business-as-usual operation, public values are safeguarded through a complex of rules, institutionalised roles and responsibilities. CBIs create a new situation in which actors may start contesting the fit of the institutional arrangements to this new situation. This process of contestation can be seen as a process of institutional overflow (Pesch et al. 2017), which in turn may lead to a response from public and private actors to try to 'repair' the mismatch, i.e. 'backflow' (Pesch et al. 2017). Such backflow may result in institutional change. The example of Airbnb, and the way local governments search for ways to adapt institutions in such a way as to 'fill the void' clearly illustrate this. This means that CBIs may also lead to redefinition of how public values can or should be safeguarded.

From a normative point of view, the institutional void raises questions because basically all CBIs operate in public domains, such as labor, welfare, public space, energy infrastructure, digital infrastructure, mobility, etc. In the public domain, institutional structures are typically legitimised by democratic processes, transparency and representation. This is not necessarily the case when it comes to CBIs; democratic legitimacy does not underlie the processes through which these crowds organise themselves, give shape to and implement the innovation. In addition, when CBIs are nurtured in innovation niches (Kemp, Schot, and Hoogma 1998; Schot and Geels 2008) through the design of new rules or exemption of rules, this creates a playing field where the established parties have to provide stability and comply with regulations to safeguard public values, whereas newcomers may be granted more freedom and are not expected to satisfy collective needs. Biber et al. (2017) argue that opting not to regulate the sharing economy is a masked form of subsidisation, which results in unequal opportunities on the market.

An interdisciplinary research agenda for governance of crowd-based innovation

There is a clear need for better understanding of how CBIs challenge institutions and how this affects public values (e.g. Frenken and Schor 2017; Van Dijck, Poell, and de Waal 2018). Such understanding is required for pro-actively designing CBIs and related governance interventions that deal adequately with public values and potential value conflicts. We argue that this research agenda has to be both empirical and normative, and needs to draw on empirical disciplines such as sociology, institutional economics, public administration and innovation studies on the one hand, and ethics and philosophy of technology on the other hand.

Based on the observation that CBIs challenge institutions and thereby raise questions in terms of safeguarding public values, leads us to three interrelated lines of research that together build up towards an interdisciplinary agenda.

Firstly, empirical research is needed to understand public values (such as legitimacy, fairness, quality and efficiency) in relation to CBIs and the responsibilities taken, granted and required for safeguarding these public values. From this perspective, there are various potential starting points for understanding CBIs in institutional voids; including theories about network governance (Hendriks 2008), social innovation (Westley 2013) and institutional theory (Smith 2007). Empirical work should address questions such as: How are public values embedded in existing institutional structures and how these are challenged by CBIs? How are public values defined and redefined by actors, both incumbent and newcomers? What are institutional responses to CBIs and how do they play out in terms of public values? For this, a process perspective can be adopted (Langley 1999), as that allows for tracing how roles and responsibilities are redefined and re-allocated, how public values are redefined, and how institutional change emerges from that. The examples of Uber and Airbnb suggest that these CBIs can be understood as institutional entrepreneurs (Battilana, Leca, and Boxenbaum 2009; Frenken 2017), where the CBI is actively searching for institutional voids as to develop a new market. Evasive entrepreneurs, although seen as an important source of innovation (Elert and Henrekson 2016) may exploit contradictions in the institutional framework to advance their CBIs. The fact that platforms generally depict themselves as technology platforms for instance shows how this framing allows them to ignore regulations (e.g. labor regulation in case of Uber). At the same time, existing rules and regulation impose barriers for CBIs. Unraveling this interaction between agents and what they do to go around or follow institutional structures, and the development of institutional structures themselves is critical for understanding the emergence and (potential) development of CBIs.

Second, governing CBIs, just as all governance, implies making value trade-offs. Whereas empirical research can show how value trade-offs are being made and how these trade-offs evolve over time, it leaves open the question what a just trade-off would entail. This normative question needs explicit attention. Ideally, this question is addressed from an empirically informed perspective because values and the way they are justly weighed and materialized are very much context-dependent and open to discussion (Pesch et al. 2017). In that sense, rather than dictating what a just value trade-off would be, empirical-normative research should focus on how value trade-offs can be made. Paradoxically, while CBIs lead to institutional voids by challenging existing institutional arrangements and thereby raise questions of legitimacy, they may also be seen as an opportunity for democracy as they may allow for societal dialogue on which public values are at stake, how they are translated in norms, how they can or should be safeguarded and how and what value trade-offs are to be made.

The third line of research would focus on institutional (re)design. This requires empirical and normative research into questions such as: What is a desirable allocation of institutional responsibilities? How can new or changed responsibilities for public values be institutionally embedded? How can supervision of public values take place? What distribution of responsibilities can be considered fair (Doorn 2016)? Literature on responsibility distributions and the problem of many hands (Thompson 2014; Van de Poel et al. 2012)

may provide a useful starting point to add an ethics perspective to this (re)design. Questions about institutional redesign dovetail with the image of a withdrawing government that is committed to a participation society. The question whether a more prominent role of individuals in financing and managing innovations is a desirable one is in itself a normative question. While the opportunities for the use of resources (such as time, money, creativity, etc.) available in a community could be a positive trend, this should not result in a *necessity*. Issues concerning democratic legitimacy, transparency and representativeness then play an even more significant role.

Concluding remarks

While there is growing academic interest in CBIs, systematic research on CBIs is nascent. With this paper, we call for an integrated empirical-normative perspective on CBIs that focuses on the interplay between public values and institutions. CBIs pose both challenges and promises for responsible innovation; it is timely to critically assess this phenomenon and to design governance arrangements that can realize the potential of inclusive and fair crowd-based modes of production and delivery of goods and services in all domains of society.

Acknowledgements

Disclosure statement

Funding

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