

Original Research Paper

Institutional entrepreneurship in the platform economy: How Uber tried (and failed) to change the Dutch taxi law

Peter Pelzer^a, Koen Frenken^{b,*}, Wouter Boon^b

^a Department of Human Geography and Spatial Planning & Urban Futures Studio, Faculty of Geosciences, Utrecht University, Princetonlaan 8a, 3584 CB Utrecht, P.O. Box 80115, 3508 TC, Utrecht, the Netherlands

^b Innovation Studies, Copernicus Institute of Sustainable Development, Faculty of Geosciences, Utrecht University, Princetonlaan 8a, 3584 CB Utrecht, P.O. Box 80115, 3508 TC, Utrecht, the Netherlands

ARTICLE INFO

JEL classification:

B52
L26
L91
O30
P37
R41

Keywords:

Platform economy
Uber
Ridesourcing
Institutional change
Legitimacy
Regulation

ABSTRACT

Platform innovations like Uber and Airbnb allow peers to transact outside established market institutions. From an institutional perspective, platform companies follow a reverse innovation process compared to innovation within traditional regulatory systems: they first launch their online platform and ask for government permission only later. We analyze the emergence of Uber as an institutional entrepreneur in The Netherlands and the strategies it employed in a failed attempt to get its UberPop service legalized through changes in Dutch taxi law. We conclude that Uber's failure to change the Dutch taxi law stemmed from the difficulty to leverage pragmatic legitimacy among users into favorable regulatory changes in a highly institutionalized regime, because Uber's institutional work strategies were not aligned.

1. Introduction

Among the fundamental questions in the social sciences is how institutions evolve. One source of institutional change are new technologies, products and services; in particular, innovations of a more radical kind underlying socio-technical transitions. Such innovations profoundly depart from existing norms and practices, and often do not comply with formal or informal institutions that have resulted from the past (Garud et al., 2002; Kaplan and Tripsas, 2008). In some cases, radical innovations even challenge the mental categories that developers, users and regulators apply in thinking about technology and markets. As a consequence, the introduction of radical innovations is often surrounded with controversies and regulatory struggles (Zelizer, 1978; Van den Belt and Rip, 1987).

A notion that has become influential in the study of institutional change is that of “institutional entrepreneurship” (DiMaggio, 1988). Institutional entrepreneurs are: “change agent[s] who initiate divergent changes, that is, changes that break the institutional status quo in a field of activity and thereby possibly contribute to transforming existing institutions or creating new ones” (Battilana et al., 2009, p. 67). Such entrepreneurs engage in “institutional work” activities (Lawrence and Suddaby, 2006), referring to the strategies and processes through which they try to achieve institutional change. Often, they meet resistance by incumbents, who act

* Corresponding author.

E-mail addresses: p.pelzer@uu.nl (P. Pelzer), k.frenken@uu.nl (K. Frenken), w.p.c.boon@uu.nl (W. Boon).

<https://doi.org/10.1016/j.eist.2019.02.003>

Received 8 August 2018; Received in revised form 31 January 2019; Accepted 1 February 2019

Available online 21 February 2019

2210-4224/ © 2019 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

as institutional defenders trying to prevent such change from happening.

While the observation that radical innovations and socio-technical transitions are accompanied by institutional change is certainly not new (Van den Belt and Rip, 1987), the analysis of such change processes in terms of institutional entrepreneurship and institutional work is rather recent (Bakker, 2014; Bohnsack et al., 2016; Fuenfschilling and Truffer, 2016; Kukk et al., 2016; Rogers et al., 2016; Moors et al., 2018). Institutional work analysis in the context of radical innovation may well increase our understanding of innovation and entrepreneurship more generally, as it would emphasize that innovation is not only – and in some cases not even primarily – about technological advance or gauging market demand, but also about actively challenging and creating institutions in a way that an innovation becomes legitimate and accepted. At the same time, it remains to be seen if the general framework of institutional work can be easily transferred to processes of innovation, in which institutional and material orders are reshaped at the same time (Latour, 1983).

We study institutional work in the context of platform innovation by looking at the introduction of UberPop by Uber in The Netherlands in Summer 2014. Uber's innovation concerns the introduction of mobile phone app that allows unlicensed chauffeurs to connect with passengers to provide taxi trips. One of the – stated – objectives of UberPop is to make urban transport systems more efficient, safe and clean, as such contributing to sustainable mobility. UberPop can be considered a two-sided online marketplace bringing together large numbers of suppliers (drivers) with customers (passengers). As such, it is part of the “platform economy” where a platform can be defined more broadly as a technology that mediates social and economic interactions online, often through apps (Kenney and Zysman, 2016). By now, examples of such online platforms can be found in a wide range of fields, including the second-hand market (Ebay), e-commerce (Amazon), accommodation (Booking.com, Airbnb), cleaning (Helpling), and online freelance work (Upwork). A “platform innovation”, then, can be defined as the introduction of a new digital medium (app, website) that actors use to develop, provide and use products or services (Gawer, 2014). We deliberately use the term platform economy rather than sharing economy; the latter chiefly refers to the utilization of idle capacity through peer-to-peer platforms, whereas the former refers to the broader phenomena of online mediated social and economic interaction (Frenken and Schor, 2017).

Despite its popularity among users and its alleged contribution to sustainable mobility, the introduction of the UberPop app by the company Uber caused controversy around the world as the platform enables drivers to provide paid taxi services with their own car and without an official taxi license. As a result, the UberPop service can be offered at very competitive prices, threatening the business of incumbent taxi suppliers who comply with government regulations (permit, diploma, car requirements). Not surprisingly, licensed chauffeurs in many cities around the world protested against UberPop's “unfair competition” as they saw their revenues declining. The Netherlands was no exception to this, resulting in controversy in the media as well as violence on the streets by licensed chauffeurs against unlicensed UberPop chauffeurs. At the same time, Uber campaigned for deregulation and actively lobbied with members of parliament to get such changes in the Dutch taxi law implemented. Uber can thus be considered as an institutional entrepreneur *par excellence*. It ignored existing regulatory institutions when introducing their app, and subsequently engaged in various forms of institutional work in an attempt to change the existing taxi law in a way that would legalize UberPop. Despite Uber's efforts undertaken for over 18 months, an evaluation report by the national government deemed legalization of UberPop undesirable. Not long after, Uber decided to stop the UberPop service in the Netherlands altogether by abandoning the app, and continued their service with licensed drivers only.

This paper is structured around two interrelated questions. First, what were the strategies deployed by Uber as they engaged in institutional work? Second, why did Uber fail to get their UberPop service institutionalized? Moreover, while not empirically comparing instances of platform innovation versus other forms of innovation, the conclusion section will reflect on the specificity of the process of institutionalization of online platforms compared to other innovations. Our study is thus both theoretically and empirically motivated. Our theoretical contribution lies in the application of the framework of institutional work to processes of technological innovation, in particular, the introduction of an online platform. We join Mair and Reischauer (2017) and Hinings et al. (2018) in their contention that institutional theory lends itself well for research into the platform economy given the change in beliefs, norms and regulations that platforms often prompt, and the struggle with incumbent regimes which they ensue. Building on this premise, we aim to achieve a more refined conceptual understanding of the characteristics of institutional change in relation to platform innovation. The empirical contribution is to study the case of a platform innovation, which is a currently ill-understood phenomenon (Nambisan, 2017), as well as a case of the *failed* institutional change avoiding the bias towards successful cases thus far (Su et al., 2017). While our study focuses on the specific institutional context of the Netherlands, the findings are arguably also relevant to the other European countries where Uber failed to get its UberPop service legalized while employed similar strategies (Thelen, 2018; Uzunca et al., 2018). With the current wave of platform innovations being introduced in sectors ranging from transport and hospitality to journalism and education (Kenney and Zysman, 2016; Van Dijck et al., 2018), the UberPop case may further provide us with insights into the dynamics that may unfold in other sectors in the near future.

2. Institutional work

Institutions can be conceptualized as informal rules (norms, values, mental categories, etc.) and formal rules (laws, regulations, technical standards, etc.) that coordinate and structure activities (Scott, 1995). Recent studies on the emergence and institutionalization of innovations have emphasized the importance of achieving legitimacy for novel products and services in order to become institutionalized (e.g. Bergeek et al., 2015; Binz et al., 2016). Legitimacy can be defined as: “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system or norms, values, beliefs, and definitions” (Suchman, 1995, p. 574). Suchman (1995) discerns three types of legitimacy: cognitive, moral and pragmatic. *Cognitive* legitimacy refers to passive support of a phenomena, without a strong consideration of interest or deliberate

evaluation. Legitimacy in this view “stems from the availability of cultural models that furnish plausible explanations for the organization and its endeavors” (Suchman, 1995, p. 582). *Moral* legitimacy is not about self-interests or direct gains, but rests on “judgements about whether the activity is the ‘right thing to do’”. Finally, *pragmatic* legitimacy “rests on the self-interested calculations of an organization’s most immediate audiences” (Suchman, 1995, p. 578). Here legitimacy stems from the rewards of an institution for an individual or organization. This can refer to direct financial gains or more elusive rewards like long-term influence on decision-making.

Over the past decade, there has been increasing interest in the question how institutions change. From the perspective of institutional sociology, this question has often been put as a “paradox of embedded agency” (Seo and Creed, 2002). If one starts from the idea that behavior is first and foremost determined by institutions that are highly stable, the question of how institutions nevertheless may change is a key question to address.

An important starting point in contemporary thought about institutional change has been DiMaggio’s (1988, p. 14) notion of institutional entrepreneurship. He argued that institutional change can occur “when organized actors with sufficient resources (institutional entrepreneurs) see [...] an opportunity to realize interests that they value highly”. Institutional change generally takes place at the level of an organizational field, what economists typically would consider the industry level. Fields are organized by an institutionalized logic which is “a field’s shared understanding of the goals to be pursued and how they are to be pursued” (Battilana et al., 2009, p. 69). Institutional entrepreneurs, then, can be defined as actors that both initiate divergent changes in a field’s institutional logic and actively participate in the implementation of these changes (Battilana et al., 2009, p. 69).

Institutional entrepreneurs engage in different types of actions in their attempt to get institutional reforms implemented. They do so intentionally¹ even if they cannot be assumed to behave in a fully informed or rational manner. The implementation process thus consists of various types of what institutional sociologists have termed “institutional work” which has been defined as: “the purposive action of individuals and organizations aimed at creating, maintaining and disrupting institutions” (Lawrence and Suddaby, 2006, p. 214). Given their intentional nature, these acts can be conceived as strategies.

Lawrence and Suddaby (2006) proposed a detailed typology of institutional work discerning twelve types of institutional work, ranging from the rather concrete act of advocacy to the more intangible act of constructing identities. The types of institutional work identified by Lawrence and Suddaby (2006) focus both on activities to maintain, to change and to disrupt institutions. Later, Pacheco et al. (2010) developed a categorization consisting of five strategies to change institutions, which they based on an extensive review of the literature. The five main strategies of implementing institutional change they discern are: framing, theorization, stimulating collaboration, lobbying and negotiation. We follow their fivefold categorization.²

Framing refers to the deliberate usage of frames to give meaning to a given – often contested – phenomenon. One can discern different types of framing: diagnostic (including an analysis of the problem), prognostic (including a proposed solution) and motivational framing (including a “call to arms” for collective behavior) (Benford and Snow, 2000; Markowitz, 2007; Misangyi et al., 2008). The strategy of framing can be considered part of developing and changing shared interpretations, and thus changing the discourse.³ **Theorization** more specifically provides a model to conceive how an innovation should or could function in a particular context. It specifically focuses on “the development and specification of abstract categories and the elaboration of chains of cause and effect” (Lawrence and Suddaby, 2006, p. 221). As such, it should be understood as a distinct strategy next to framing. While framing posits an overall viewpoint often with the aim of persuading other actors, theorization offers support for particular knowledge claims and mechanisms that underlie the implementation of an innovation in particular contexts. Jointly, framing and theorization create a *vision for divergent change* (Battilana et al., 2009). Visions not only provide directionality and mobilize allies, but also – implicitly or explicitly – call the prevailing institutions that maintain a socio-technical regime into question (Geels, 2002; Fuenschilling and Truffer, 2016).⁴ The mobilization of actors and resources by institutional entrepreneurs involves various processes. Through stimulating **collaboration**, they try to involve other stakeholders in order to facilitate the implementation (Battilana et al., 2009; Klein Woolthuis et al., 2013). Such collaborators may be competitors in an organizational field or actors in other related fields. Furthermore, institutional work often involves **lobbying** and political advocacy to get actors with political power on one’s side. This is particularly the case when institutional change is directed at changing formal regulations. **Negotiation**, finally, refers to a situation in which an institutional entrepreneur tries to come to an agreement with another party to reach consensus.

The timing of conducting these strategies is important (Perkmann and Spicer, 2007). Several authors have proposed a rather similar hypothesis about the ordering of strategies over time. Battilana et al. (2009) suggests the stage of creating a vision is followed by a stage of mobilizing allies. This ordering is in line with Strang and Meyer’s earlier suggestion when they argued that “for new practices to become widely adopted, they [first] have to be ‘theorized’” (1993, p. 60). In a similar vein, Binz et al. (2016) argue that the type of institutional work associates with the maturation of a Technological Innovation System: framing and theorization occur in the early and immature phase, whereas collaboration, lobbying and negotiation would typically occur in later phases. Effective

¹ The discussion whether institutional entrepreneurship also should be defined as intentional or not, is beyond the scope of this paper. On this, see Micelotta et al. (2017).

² The fivefold categorization is consistent with the two processes of visioning and mobilizing resources as outlined earlier by Battilana et al. (2009). Framing and theorization underlie the process of creating a vision about the need for institutional change, while collaboration, lobbying and negotiation are part of the process of mobilizing allies to support the implementation process of new institutions.

³ A classic example in the context of institutional entrepreneurship is how Kodak framed photography as a holiday activity with the aim to engage lay people to take pictures next to expert photographers (Munir and Phillips, 2005).

⁴ Note that due to the material nature of technological innovation, institutional work here may also involve educating (teaching how to use a new technology) and mimicry (connecting a new technology to existing practices or complementary technologies) (Binz et al., 2016, pp. 253–254).

politicking strategies should be preceded by a vision that maps out the likely positive consequences of institutional reform. A vision can be considered as an “imaginative engagement of the future” (Emirbayer and Mische, 1998) that needs to be followed up by practical actions as to remain a motivational force (Battilana and D’Aunno, 2009).

The five institutional-work strategies constitute our main framework to *map* the constellation, interdependencies and time ordering of strategies applied in the process of implementation of institutional changes. From such a mapping, we proceed to analyze why certain strategies succeeded or failed to support the implementation of institutional change (Garud et al., 2002). The five strategies thus function as a way to both describe and understand how institutional work took place with regards to platform innovation. While analyzing the five strategies, ample interpretative space remains for other strategies and factors to emerge from the analysis, which we will discuss in the final section as pitches for further theorizing.

3. Methods and materials

3.1. Case selection

We conducted an in-depth case study into how Uber tried to change institutions in the Netherlands. We consider the case well-suited for an analysis of institutional work for various reasons. First, there was a clear *starting point* for the case study (the introduction of UberPop in July 2014) and a clear endpoint (Uber ending the UberPop service in November 2015). Second, the institutional work undertaken by Uber in the Netherlands is well *observable*. The actions of Uber in the Netherlands are well-documented in the media and have a clear institutional outcome: the publication of the adapted Dutch Taxi Law in May 2015. What is more, we were able to conduct interviews with all key stakeholders in the same year avoiding recall bias. Third, UberPop conflicted with the existing institutions and the incumbent taxi sector, which illustrated that this is a clear example of an *attempt to implement* institutional change. Uber even explicitly declared itself an actor aimed at changing institutions (*De Volkskrant*, July 31, 2014).

3.2. Methods

A qualitative methodology was used, which consisted of the following three analytical steps.

- 1 *A systematic scan of the public debate in the media*, with the purpose of tracing the most important dynamics in the debate from July 2014 to November 2015, parcel out crucial events and positions, and provide inputs for the interviews in which events, perceptions and motives are discussed in more detail and triangulated against media coverage. Various intermediate media scans were conducted in 2015 and 2016 to select interviewees, prepare for interviews and develop hunches. The definitive set of analyzed media articles was selected by applying a search query on the term “UberPop” for the six largest Dutch national newspapers in Lexis-Nexis on 28 June 2017.⁵ This led to a selection of 322 articles that were first scanned for relevance and then grouped chronically to map the key events and positions that unfolded during the process. When they are used in the empirical narrative (e.g. through a quote), we refer to them as: < < name newspaper, date > > .
- 2 *Five interviews with key stakeholders were conducted* (see Table 1). From the government side, representatives of the three main responsible bodies (Ministry of Economic Affairs, Ministry of Infrastructure and the Environment, and the Municipality of Amsterdam) were interviewed. From the taxi sector interviews were conducted with representatives of the Royal Dutch Taxi Association and the Amsterdam Taxi Network. These interviews all took place in 2015, in the midst of the critical events. Each interviewee was asked which other stakeholder should be interviewed next, which is known as “snowball sampling” (Bryman, 2015). All these interviews were transcribed verbatim and coded using the NVivo software package. This coding process consisted both of clustering insights (quotes) about the five institutional work strategies and an open coding process in which insights about the three research questions that drive this paper were given a code and clustered. At a much later stage (1 September 2017), we were also able to interview the former Dutch national Secretary of State Wilma Mansveld, who was in charge of the taxi industry at the time UberPop was operational (July 2014 – November 2015) and responsible for adaptations in the taxi law (May 2015). This late-stage interview allowed us to cross-validate our interpretations from the earlier five interviews and analysis of newspaper articles. This critical interview deepened and corroborated our understanding of the findings. Because of privacy reasons, the other interviewees are not mentioned by name in this paper, except for the Secretary of State, who gave consent to do so. The director of Uber for the Netherlands was approached multiple times, and an initial appointment was made. Eventually, no interview has taken place. His ample public statements in newspapers are, of course, included in the analysis.
- 3 *Six interviews with journalists and experts were conducted*. This includes four journalists of Dutch national newspapers, a Dutch platform economy expert and an American academic with extensive expertise on the institutionalization of UberPop (known as UberX) in the state of California. The purpose of interviews with the journalists and Dutch platform economy expert was to obtain new insights. Preliminary hypotheses (“hunches”) that emerged from the stakeholder interviews and the content analysis of the public debate were tested and refined in these conversations. As such, it was a way to test the validity of the findings and to evaluate whether saturation in terms of both findings and stakeholder interviewees was achieved. Because of practical constraints,

⁵ The Lexis-Nexis request has been as follows: Download Request: Selected Items: 1-322 ; Time Of Request: Wednesday, June 28, 2017, 10:36:54 ; Terms: ((uberpop) and Date(geq(01/01/2014) and leq(01/01/2016))) Source: De Telegraaf;NRC Handelsblad;AD/Algemeen Dagblad;Trouw;De Volkskrant;Het Parool.

Table 1
Overview of interviewees (names are removed for anonymity).

Type of interview	Description affiliations interviewee	Role in empirical analysis
Key stakeholders	Civil servant, Ministry of Economic Affairs	Describe and understand institutional work strategies
	Civil servant, Ministry of Infrastructure and the Environment	Describe and understand institutional work strategies
	Civil servant, Municipality of Amsterdam	Describe and understand institutional work strategies
	Representative, Royal Dutch Taxi Association	Describe and understand institutional work strategies
	Representative, Amsterdam Taxi Network	Describe and understand institutional work strategies
	Uber	Not willing to participate in interview, despite several requests
Secretary of State	Ministry of Infrastructure and the Environment	Triangulate findings
Journalists/experts	Four journalists of Dutch newspapers	Triangulate findings
	Platform expert	Triangulate findings
	International expert	Provide international context

we were not always able to record these interviews, so notes were made directly after each of these conversations. These interviews took place over the course of 2015, when the main events related to Uber’s institutional work took place.

4. Institutional work in the Dutch taxi sector 2012–2015

4.1. Context: the Dutch taxi sector running up to 2012

Compared to the United States where Uber started, the Netherlands does not have a strong taxi culture. The yearly revenue of the taxi sector is around one billion euros, of which around eighty percent is for so-called contract mobility based on a contract and a fixed price, e.g. in healthcare and care for the elderly. The institutional work of Uber focused mainly on the remaining twenty percent of what constitutes the pick-up market.

A critical event took place in the year 2000 when a new law “WP2000” liberalized the taxi market. WP2000 aimed to ensure a market that was open and competitive, but also that taxi service is of high quality. Since 2000, regulations include passing an exam to get a permit, proving that one has no criminal record, a car with a dedicated blue license, taximeter and on-board computer (tracking routes and driving hours), a maximum price, and providing clients with a printed receipt.

As new chauffeurs were free to enter the market under these regulatory conditions, the new law disgruntled incumbent taxi drivers who saw the value of their permit suddenly dropping. This resulted into heavy riots in Amsterdam and several incidents between existing taxi drivers and newcomers penetrating the then-open market. This period is sometimes referred to as the “first taxi war”. After 2000, the Ministry and taxi sector representatives (especially the Royal Dutch Taxi Association) worked hard to improve their relationship and to discuss further policy changes, as to ensure more legitimacy and compliance among drivers.

It is against this background that the more recent entry of Uber and its various services is to be understood. Fig. 1 depicts the key events drawn from the analysis of newspaper articles.

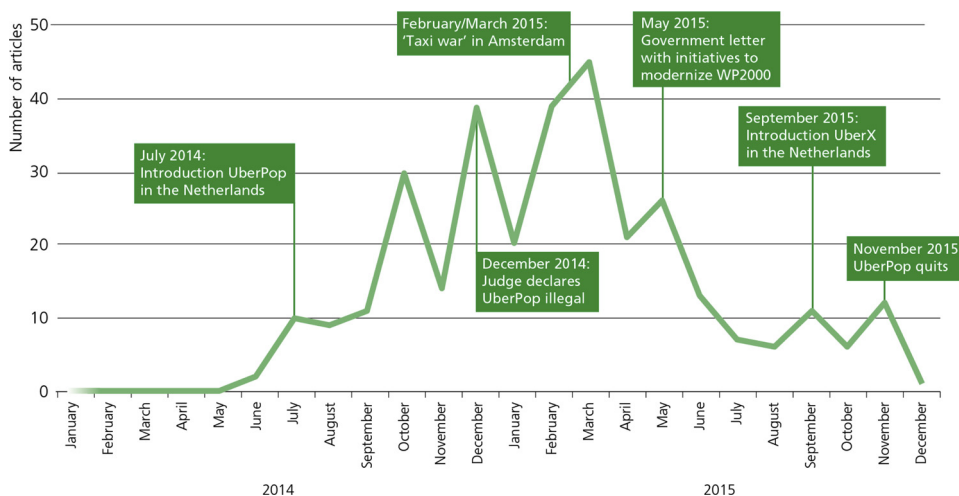


Fig. 1. Key events and number of articles containing the term “UberPop” in the six largest Dutch newspapers per month from January 2014 to December 2015.

4.2. December 2012 – June 2014: the introduction of UberBlack

In late 2012 UberBlack⁶ app was introduced on the Dutch market, starting in Amsterdam. The price was around 20 percent higher than regular taxis, vehicles were more luxurious and drivers were wearing suits. The new service did not meet all regulations; for instance, it did not provide a printed receipt and had prices above the maximum rate. The Ministry of Infrastructure and the Environment, responsible for taxi regulation, was nevertheless quite willing to accept UberBlack on the market. Initially, the Royal Dutch Taxi Association was also appreciative of the innovations that Uber was pushing through. As an interviewee from this organization notes: “There were some small things about [Uber] Black that did not completely fit the law, for instance about the metering system. But we only started to have a fierce disagreement when UberPop was introduced”. Looking back, this initial period can be considered as a relatively quiet prelude to a phase of heavy turmoil starting with the introduction of UberPop.

4.3. July 2014 – May 2015: struggles about UberPop

In July 2014, UberPop was introduced in Amsterdam and later that year also in other large Dutch cities. Different from the UberBlack service that only allowed licensed professional chauffeurs to use the app, the UberPop app was also open to unlicensed amateur chauffeurs. From the start, Uber coined UberPop as a ridesharing⁷ service and framed the service as part of a more fundamental shift in urban mobility. Given that ordinary people without permit would provide taxi services using their own private car, prices would decrease, as the experience in the U.S. already showed. What is more, according to Uber, people living in cities could do away with their own car and use a combination of Uber and public transport instead (*De Volkskrant*, October 15, 2014). UberPop would then contribute to less congestion, less pollution and better land use.

The public debate, though, was not so much about changing to other mobility solutions, but about the alleged illegality of Uber. The Royal Dutch Taxi Association and the Amsterdam Taxi Network, the Municipality of Amsterdam and the Ministry of Infrastructure and the Environment all pointed out from day one that UberPop was illegal because the amateur chauffeurs making use of the UberPop app did not comply with the taxi law (WP2000). This position was confirmed by a pivotal court case in December 2014.

In early 2015 the friction got more material. In several cities, incidents were reported of taxi drivers chasing and even threatening Uber drivers. During this period, enforcement efforts by the Ministry also intensified, and several UberPop drivers were prosecuted. While Uber paid their fines, drivers did run the risk of getting a criminal record. Moreover, in March 2015 there was a raid at the Uber headquarters in Amsterdam, which should mainly be interpreted as a signal towards taxi drivers that the Ministry was actively enforcing.

4.4. May 2015 – December 2015: phasing out of UberPop

In May 2015 Wilma Mansveld, the Secretary of State of Infrastructure and the Environment published a long-awaited letter to parliament in which she announced the modernization of the WP2000. The letter announced a looser regulation for taxis. In particular, printed receipts and taximeters were not required anymore. However, two crucial regulatory requirements remained intact: the taxi has to be a dedicated vehicle with a blue license plate and the board computer remained mandatory. After three weeks of silence, Uber’s CEO Niek van Leeuwen responded in a national newspaper:

“We still see some barriers. (...) The board computer is an unnecessary burden. It registers taxi trips and driving times. An app can do the same much cheaper and often much better. (...) [another] hindrance is the fact that using your own vehicle as a taxi is still not allowed. Not very handy, because it leads to unnecessary car usage because taxi drivers have a second private vehicle for private use.” (*de Volkskrant*, May 28, 2015)

The incumbent taxi lobby, by contrast, was very positive about the proposed solutions of the amended WP2000. The spokesperson of the Royal Dutch Taxi Association stated:

“This is really good for taxi companies, because most of the rules were increasing costs and useless. In the past these requirements were needed, but not anymore.” (*AD*, May 6, 2015)

At first glance this seemed a victory for the existing taxi regime: there would be less rules and their challenger UberPop would remain illegal. However, while Uber lost this battle, the struggle continued. The updated WP2000 also stated that the government should introduce “experimental spaces”, where existing rules did not apply, providing a testbed where public and private actors can try out and learn about an innovation. Initially, such testbeds would only be allowed in rural areas where public transport retreated. However, a majority of the Parliament voted in favor of extending such spaces to urban areas, providing a window for UberPop to continue legally, at least, on a temporal basis. This majority vote most likely resulted from a strong lobby by Uber. As one of the

⁶ For the sake of the argument, the similar and slightly more expensive UberLux service is not discussed here. Its role in the case study described in this paper is similar to that of UberBlack.

⁷ In Dutch “*meerijden*”, meaning to drive along with someone. Uber called ridesharing a “close cousin to carpooling”. We refer to “ridesharing” as the way Uber described its service and use the in our view more apt term “ridesourcing” (Rayle et al., 2016) when we as researchers describe the phenomenon.

Table 2
Institutional work strategies deployed by Uber in their attempt to change the taxi law.

Implementation strategy		Estimated impact
Framing	Taxi law is unclear Taxi law is outdated	Legal case about interpretation of the law was lost, no resonance Mentioned in speech by high civil servant and positive attitude of Minister Kamp
Theorization	Utilization of idle capacity leads to a more sustainable urban mobility system UberPop leads to a better matching of supply and demand Regulation always follows innovation	Little resonance, later it was questioned whether the capacity is actually idle Acknowledged by different spokespersons, but did not dominate the debate Some resonance by stakeholders in the “innovation policy” scene
Collaboration	Petition about changing the taxi law	Signed by over 16,000 people, some attention on Twitter, little effect
Lobbying	Lobbying at members of parliament Lobbying at Ministry of Economic Affairs Lobbying at Ministry of Infrastructure and the Environment	Seemed effective, positive remarks in media and debates in parliament, led to “experimental space” in urban areas Relatively positive reception, but not decisive in eventual change Not very successful, taxi sector was able to bring across their message more effectively
Negotiation	Some conversations at the Ministry of Infrastructure and the Environment	Never any real negotiation about critical issues (board computer, license)

interviewees noted: “without Uber, this amendment would not have been brought in”. Yet, no municipality up to the time of writing (February 2019) has set up such an experiment with UberPop.

The story ends with two important and related events. First, in September 2015, Uber announced the introduction of UberX in the Netherlands. Unlike UberPop, this service met all the requirements of the renewed WP2000, but was considerably cheaper than the UberBlack service. Second, in November 2015, Uber announced it stopped the UberPop service. According to Niek van Leeuwen:

“We hope that by quitting with UberPop we can work towards constructive solutions for the taxi market. UberPop is not an end in itself, but the aim is to create a legal framework for ridesharing services. In the Netherlands that is at the moment, contrary to the U.S., not a realistic prospect.” (NRC *Handelsblad*, November 21, 2015)

5. Analysis of institutional work strategies

To analyse the ways in which Uber attempted to legalize its UberPop service through changes in the Dutch taxi law, we look at five institutional-work strategies: framing, theorization, collaboration, lobbying and negotiation. Results are summarized in Table 2.

In terms of **framing**, two approaches were followed simultaneously. The first approach aimed to position Uber as an actor operating *outside* the taxi field. Instead of defining itself as a taxi company, it consistently referred to itself as a technology company. Within this approach, Uber applied two main frames to describe the Dutch taxi law (WP2000). First, Niek van Leeuwen emphasized in several interviews that he found the taxi law *unclear*, for example, when he was interviewed by the main Amsterdam daily newspaper *Het Parool*:

“The [taxi] law is unclear in this regard. If our company is compared to one that facilitates *snorders* [illegal taxis], like the ILT [transport enforcement authority] does, we disagree. The law they are using comes from 2000, but time has passed and technology has progressed.” (Niek van Leeuwen in *Het Parool*, August 23, 2014)

An integral part of the “lack of clarity” frame is that Uber consistently called UberPop a ridesharing service, which they articulated as a supposedly new category and which, if anything, should be regarded as closer to carpooling than to a taxi service. The current law was, according to Uber, unclear about how to deal with a new category like ridesharing. Interestingly, journalists simply copied this notion while only much later they started to question it or to put it in quotation marks. Uber employed this ridesharing terminology until the very end despite the fact that both the incumbent taxi sector representatives (Royal Dutch Taxi Association and The Amsterdam Taxi Network) and the enforcement agency of the Ministry (ILT) depicted UberPop as an illegal taxi service (“*snorders*”). This “counter-frame” (Benford and Snow, 2000) was quickly supported by two academics in an op-ed in the same Amsterdam daily *Het Parool* in October 2014 as well as by the judge in the court case in December 2014 (De Rechtspraak 2014). Indeed, none of our other interviewees agreed with the argument that the taxi law was unclear about the illegality of the UberPop service.

The second frame Uber articulated held that the taxi law was *outdated*:

“The taxi law is from 2000. To realize how outdated that law is, you just have to think of Google, which got a Dutch page in 2002. Facebook was founded in 2004 and the iPhone was introduced in 2007. Technology has advanced and offers more opportunities, which we utilize by matching supply and demand for mobility. The law is not changing along with these developments, it hampers progress.” (Niek van Leeuwen in *Het Parool* December 20, 2014)

UberPop consistently repeated this “anachronism argument” in most of its communications, and got support in the annual New Year’s speech of the top civil servant Maarten Camps of the Ministry of Economic Affairs in January 2015. Camps argued in more

general terms – but using Uber among others as an example – that regulation should keep up with technological innovation. This frame continued to dominate in the adapted taxi law introduced in May 2015, in which explicit reference was made to the new opportunities of digital technology and several outdated car requirements. For instance, a paper receipt and taximeter were no longer required. However, the board computer – a major bottleneck for UberPop because these are not installed in regular cars – remained mandatory. Instead, the Secretary of State of the Ministry of Infrastructure and the Environment announced in May 2015 that the value of the board computer would be evaluated as soon as possible before summer 2016; yet, to date (February 2019), this evaluation has still not been finished. As became apparent in the interviews, incumbent taxi drivers and the Ministry of Infrastructure and Environment had converging interests contributing to a technological lock-in: taxi drivers realized that the board computer posed a barrier to entry for chauffeurs (be them amateurs or professionals), while the ministry wanted to avoid a political crisis that was expected to emerge if a technology would be abandoned that recently got massive government support.

In terms of **theorization**, three distinguishable cause-effect relations were put forward several times by Uber. The first theorization is that through UberPop idle capacity is more effectively utilized:

“Just look around and you see cars standing idle. A car might be the worst investment one can do. In general it is only used for two trips a day: in the morning to work and in the evening back home. The rest of the day it stands idle.” (Niek van Leeuwen in *Het Parool*, December 20, 2014)

So, Uber saw ridesharing as a new category distinct from traditional taxi services that would increase car use efficiency. Although Uber never claimed to be part of the “sharing economy”, they did stress repeatedly that their service makes use of under-utilized resources and, if scaled up, would end private car ownership. This reasoning is part of a broader vision that once UberPop would be omnipresent in all major cities, urban residents could give up their car. Uber’s vision even went one step further in linking decreasing idle capacity with sustainability. Uber claimed to offer a service that was complementary to rather than competing with public transport, and, more broadly, to be a key part of a future sustainable mobility system. Most clearly, this was expressed in an op-ed by Uber CEO Van Leeuwen published just a few days after the first UberPop chauffeurs were fined by the ILT. In Van Leeuwen’s op-ed, Uber’s vision is formulated as:

“The successful rise of Uber cannot be seen separately from innovation and technological development. [...] Uber is able to improve the functioning of the market, improve quality and decrease taxi rates. (...) A broad application of UberPop in large cities can even become a safe and cheap alternative for car ownership. (...) This is part of a grand vision in which better utilizing private vehicles has a positive impact on traffic jams, the environment, usage of space and energy usage.” (Niek van Leeuwen in *De Volkskrant*, October 15, 2014)

The second cause-effect relation brought forward by Uber is that the platform matches supply and demand more efficiently and in an innovative way. Put differently: Uber articulated a theorization about how its innovation raised revenues for drivers (through more trips) and cheaper rides and lower waiting times for customers (due to direct matching) while maintaining the quality of service through ex-post ratings. UberPop could not derive legitimacy from regulations, so Uber sought alternative support for its innovation claim by emphasizing the user experiences of passengers. It could build its popularity among users in a short time, supported by their complementary high-end service UberBlack which they launched already in late 2012, which had many features in common (app-based reservation, GoogleMaps visualization, credit-card payment, rating). Achieving legitimacy among users is generally considered a precondition for a technology to diffuse (Binz et al., 2016). After the introduction of UberPop, its legitimacy was voiced by three different actors. First, in the aforementioned op-ed from 15 October 2014, Uber cited the high approval rates of users regarding price, waiting times, convenience and safety based on a survey carried out by Accenture (commissioned by Uber). The survey results also showed that the large majority of both drivers and passengers considers the rating system an effective way to warrant the quality of the service in the absence of government regulations. Second, in the first month after the introduction of UberPop on 31 July 2014, no less than four journalists from different daily newspapers reported on their own experience by ordering an UberPop taxi. In their articles, they all emphasized the low cost and good service compared to conventional taxis in Amsterdam. Finally, some public figures embraced UberPop in public (including a TV celebrity with 250,000+ Twitter followers and the prolific founder of news platform Blendle with 400,000+ Twitter followers), thus advocating the innovation to a broad audience.

As a third cause-effect relation, Uber developed an argument about the way in which regulation is related to innovation. Uber director Niek van Leeuwen said that “regulation follows innovation” suggesting a natural, almost teleological, course of events. The innovation theorization continued to work for Uber in that it was made the central frame in the evaluation of the taxi law as published by the Secretary of State of Infrastructure and The Environment in May 2015. Most of the proposed revisions by the Ministry of Infrastructure and the Environment in the new taxi law were framed as a response to technological innovation, in particular smartphone apps, and the alleged benefits to consumers and society as a whole – while this was initially not the purpose of the revision of the WP2000. During the whole process, the innovation claim was not flat out contested, apart by incumbent taxi chauffeurs who argued that the lower prices simply stemmed from evading regulations (which reduce the cost of a car) and taxes (which reduce the cost of labor). Incumbents’ dominant counter-frame kept emphasizing that the incumbent taxi sector also “favors innovation”, but always adding that innovations should be carried out within the boundaries of the existing law as to assure a level playing-field.

The strategy of **collaboration** was only applied limitedly. Before UberPop was introduced, regular taxi drivers were driving for UberBlack and the stakeholders were on speaking terms. The Amsterdam Taxi Network, later one of Uber’s fiercest opponents, envisioned how the UberBlack platform could lead to more trips for their members. However, when UberPop was introduced the relationship with key stakeholders (taxi lobby, municipalities, Secretary of State) became rather antagonistic. Uber did enter into

strategic partnerships early on in Autumn 2014 with the national airline (KLM), a major bank (ABN) and the credit card services (ICS). By aligning with high-status companies, Uber followed a deliberate strategy to gain more legitimacy as well as brand recognition. However, once UberPop became controversial with the December 2014 court case nearing, Uber's partners quickly discontinued their collaborations. Finally, and similar to Uber's strategy in the U.S., Uber reached out to its customers to sign a petition directed at Secretary of State Wilma Mansveld of the Ministry of Infrastructure and the Environment. In this petition, which was signed by over 16,000 people, the government was asked to change the taxi law as to officially legalize UberPop, at least temporarily (which was eventually not done).

As another strategy, Uber immediately started an active **lobbying** campaign to convince politicians to change the taxi law in such a way that UberPop would become a legal service. Already two months after the introduction of UberPop, a breakfast session was organized for members of parliament to present the evaluation based on an Accenture report. Uber's initial strategy was to lobby for the company not to be regulated as a taxi firm. Instead, Uber proposed a new category similar to its special status as a Transportation Network Companies (TNC) in many U.S. states, which exempts Uber, Lyft and other ridesourcing platforms from the prevailing regulations for traditional taxi companies and drivers. Uber simply sent a legal template taken directly from the U.S. context to the Ministry of Infrastructure and the Environment. However, as became apparent from the interviews, the lobby at the Ministry of Infrastructure and the Environment was not very successful.

By contrast, the conventional taxi lobby got their message across more effectively at the Ministry of Infrastructure and the Environment, openly reporting in the press about constructive discussions with the Secretary of State in March 2015. The success of the conventional taxi lobby representing licensed chauffeurs coincided with the peak of intimidation and even violent actions by the same licensed taxi chauffeurs against UberPop chauffeurs during February and March 2015. The fact that violent actions among chauffeurs would emerge if UberPop continued its operation had already been predicted, though not legitimized, by the conventional taxi lobby at the start of UberPop in July 2014. Such violent atmosphere was reminiscent of other Taxi wars in the late-1990s in Amsterdam, which still provided an important backdrop for the discussion and which local and national governmental actors wanted to avoid.

The Ministry of Economic Affairs seemed more open to the lobbying activities of Uber compared to the Ministry of Infrastructure and the Environment, although their concern was not just about the taxi law, but more in general about developing regulation which did not hamper innovation and was open to newly developing platform initiatives. In addition, Uber seemed to be quite successful at lobbying at members of parliament. Niek van Leeuwen openly indicated that several members of parliament supported Uber's cause, stating early on that: "the Second Chamber (the Dutch House of Representatives) feels that structural changes in the taxi law are desirable" (*de Volkskrant*, October 16, 2014). Yet, Uber's failure to lobby at the Ministry of Infrastructure and The Environment, responsible for both taxi policy and enforcement of taxi regulations, made their efforts rather ineffective.

Finally, Uber tried to engage in **negotiations**. Its willingness to negotiate was expressed when Van Leeuwen told an interview reporter on 14 October 2014: "everything is negotiable". Yet, in several talks with the Secretary of State, Uber only repeated that the two regulatory hurdles – licenses and on-board computers – should be removed. As the Ministry, and most political parties, felt that the taxi market should remain regulated by a compulsory license to ensure safety of passengers and by an on-board computer to enforce tax and labor laws, Uber's demands were not met. The Ministry was open to discuss the abandonment of other regulations, but left no room to discuss abandoning the license and board computer requirements. Uber continuously kept on insisting that the law regarding these two issues needed to be loosened. As former Secretary of State Wilma Mansveld noted: "For Uber two issues always remained top priority: no board computer and no drivers without a license", creating a deadlock in negotiation. As an involved civil servant noted: "At a certain moment (...) we decided: we're not going to talk with them [Uber] anymore".

6. Why did Uber fail?

The rise of smartphones and internet platforms provided the technological window which allowed Uber to quickly roll out its UberPop service in the otherwise highly regulated context of the Dutch taxi market. The technologies that allowed Uber to launch the UberPop service for unlicensed drivers also underlie some of Uber's rhetorical arguments to point out that taxi regulations were outdated, as regulations did not foresee the new possibilities to organize markets through an app-based, online platform. Yet, Uber did not succeed to change the regulations as intended. In May 2015 an evaluation of the Dutch taxi law was presented, which only led to some minor regulations being lifted (e.g. the compulsory printed receipt and the taximeter). The main hurdles to UberPop's business model, however, remained in place: drivers need a special taxi license and their cars need to have an on-board computer. This prevents people to use their own car for occasional rides as presupposed by the UberPop model—which is allowed in many U.S. states and many countries outside Europe. From Uber's perspective, its range of strategies to change the Dutch taxi law thus failed.

Our observation is that Uber seriously engaged in all five implementation strategies. Hence, we cannot conclude that they failed to change the regulations in their favor due to an omission of one or more implementation strategies. However, the *time ordering* of the five strategies is striking: Uber pursued all of the strategies almost simultaneously from the start. Framing started at day one with their press release on July 31, 2014, quickly followed by lobbying at the parliament (October 1, 2014). As a reaction to criticisms by the transport enforcement agency, Uber started theorizing in their op-ed in *De Volkskrant* (October, 15, 2014). And, they also announced collaborations with key partners such as KLM, ABN and ICS within the same month. Uber's fast and seemingly chaotic rollout of parallel strategies may be part of the explanation why they eventually failed.

Engaging in various institutional-work strategies simultaneously brings a higher risk of *incoherence* of such strategies. [Perkmann and Spicer \(2008, p. 837\)](#) argued in this context that an innovation is "more likely to become an institution through the cumulative results of different kinds of institutional work over time, compared to conjoint expenditure of institutional work at specific points in

time.” They point in particular to the importance of coherence of strategies in cases where one aims to change multiple institutions, as institutions change through different mechanisms. In particular, coherence can be achieved by framing and theorizing activities that emphasize both the plausibility and the desirability of an innovation, so as to lay down a legitimate basis for more practical institutional work (collaborating, lobbying, negotiating) to change regulatory institutions later on in the processes.

The implementation strategies employed by Uber clearly had as their main objective to achieve institutional change, in this case, to convince both the Parliament and the Ministry of Infrastructure and the Environment to change the taxi law. As we have introduced in Section 2, gaining legitimacy is one of the cornerstones of successful institutional change. Suchman’s (1995) conception of pragmatic legitimacy is helpful in understanding how Uber proceeded. Uber tried to get support for its vision of UberPop as a superior innovation and as a contribution to sustainable mobility, mainly by referring to the app’s pragmatic legitimacy as evident from the popularity of the UberPop service among passengers. The aggressive rollout – typical for platform innovations which can be distributed online at zero marginal cost and benefit from network externalities among users – precluded a societal debate to discuss the legitimacy of Uber’s new service on cognitive and moral grounds. This approach effectively prevented Uber from entering into serious negotiations with the ministry. It can be marked as an “act now, ask permission later” attitude, betting on pragmatic legitimacy at the expense of a widely shared understanding (cognitive legitimacy) and approval (moral legitimacy). The ministry emphasized that they did not regard Uber as a legitimate partner to discuss and “co-create” new regulations as long as the UberPop service remained operational thus violating the taxi law. Possibly, Uber could have been more successful if it would have aborted the UberPop service at some point, for example, right after the court case in December 2014. While such a move would have prevented Uber to continue to build up practical legitimacy among its drivers and passengers, it would otherwise have pacified the conflict and provided Uber with a seat at the negotiation table leading up to the evaluation of the Taxi law in May 2015.

As an institutional entrepreneur, Uber’s five implementation strategies thus primarily aimed at achieving pragmatic legitimacy. As a result, Uber was forced to counterframe their practice as being illegal, rather than positioning itself univocally as an innovator providing superior consumer experience. Similarly, theorization about the way in which the mobility system may become more sustainable with cheaper taxis operated by any citizen could have changed the mental categories about taxis and urban mobility. However, Uber’s continuation of UberPop with criticism mounting among various stakeholders led the whole debate to focus on the question of legality rather than anything else.

Finally, the role of incompatibilities between the UberPop service and the local material contexts and practices should be emphasized as a reason for the failure to change the Dutch taxi law (Nambisan, 2017). While private-car ownership and taxi use is much more prevalent and engrained in U.S. cities, cycling and public transit are much more important in Dutch cities, especially in Amsterdam. This is significant for a ridesourcing platform like UberPop, as suppliers can only make a decent return per hour if consumer density is high. Additionally, a key material barrier turned out to be the on-board computer which remained mandatory despite Uber’s arguments that this solution is obsolete in the age of mobile phone and cloud storage. The national government had invested large sums of subsidies in the on-board computer as well as political capital by having the on-board computer requirements implemented by law to enforce tax compliance and taxi regulations. All this happened during a sensitive period when the Dutch government had been repeatedly criticized for a range of expensive failed IT projects in other domains. Interestingly, incumbent licensed taxi drivers endorsed the compulsory board computer and had converging interests with the Ministry of Infrastructure and Environment in maintaining the technological lock-in: taxi drivers realized that the board computer posed a barrier to entry for chauffeurs (be them unlicensed amateurs or licensed professionals).

7. Conclusions

Against the backdrop of the ongoing controversies regarding the rapid rise of online platforms and debates about their regulation, we analyzed how Uber tried to change the Dutch taxi law to legalize the UberPop service. We approached our case by answering two research questions: what were the strategies deployed by Uber as they engaged in institutional work? And why did Uber fail to get their UberPop service institutionalized? In short, we found that Uber employed five institutional strategies, but by applying them simultaneously and betting mostly on pragmatic legitimacy, incoherence crept into the approach. Uber’s combined approach to continue operating the UberPop platform while at the same time trying to lobby for new regulations, proved an incoherent approach in the Dutch context. As a result, Uber did not become part of a constructive political process of “co-creation” that led to changes in the taxi law. On the contrary: Uber’s approach provided ample opportunities for incumbent national taxi lobby and municipalities of large cities to have their wishes heard by the national government: to maintain the *status quo*.⁸

While the theoretical lens of institutional work proved helpful in analyzing how a platform company challenged the existing taxi regime, our study also highlights some specificities of digital platform innovations compared to the introduction of new and discrete products, which requires further theorizing. What is typical for platform innovations is that these are launched through the Internet in the form of a (mobile) app that anyone can download. This allows a platform company to introduce a new service at almost zero marginal cost and from any remote destination, enabling a particularly aggressive launching strategy (Kenney and Zysman, 2016; Dudley et al., 2017) and marking an “act now, ask permission later” attitude.

In terms of institutional theory, this strategy bets on the pragmatic legitimacy that a new platform-based service will gain once the

⁸ The effective actions of the Dutch incumbent taxi lobby are contrary to the U.S. context where incumbent taxi companies faced a collective action problem in contexts where states are responsible for taxi regulation. Only in contexts where municipalities are responsible for taxi regulation, incumbent taxi companies tended to be successful in restricting the entry of ridesourcing companies (Tzur, 2017).

service gets popular among users. A large customer base renders the platform's legitimacy "self-explanatory". A platform's user community can further be leveraged to put pressure on authorities to change regulations in the platforms' favour, for example, via online petitions signed by app users (cf. Reischauer and Mair, 2018). The fast roll-out of a platform innovation compromises a gradual process through which stakeholders can develop shared understandings and meanings (contributing to cognitive legitimacy) and norms and valuations of the innovation (contributing to moral legitimacy).

Regarding the timing of the institutional work strategies, we also observe a process that is arguably distinct for platform innovation. Contrary to the "build up" logic in institutional work, we did not observe a sequence in which the development of a vision (framing, theorizing) preceded politicking (collaboration, lobbying, negotiation) (Strang and Meyer, 1993; Battilana et al., 2009; Binz et al., 2016). Rather, strategies were applied simultaneously. Since a platform innovation aims to scale up fast and to penetrate a market almost instantaneously, its diffusion is not necessarily preceded by framing and theorization, let alone a public debate. Instead, its rapid growth provokes a regulatory debate. Such a response from the government urges both institutional entrepreneurs and institutional defenders to immediately engage in politicking strategies, which precludes an open and informed public debate. Whether such a situation is desirable remains a normative question, but the process does leave out the possibility of *ex ante* technology assessment (including risk assessment and environmental assessment). In the case of Uber in the Netherlands, for example, there were no serious discussions regarding its possible long-term impact on car ownership, car kilometers driven or bike and public transit use (Clewlow and Mishra, 2017).⁹

Theoretically, our study also speaks to the role of enabling conditions in the theory of institutional entrepreneurship. Whereas Battilana et al. (2009) emphasize the presence of multiple institutional orders as an enabling field-level condition, our analysis showed that the multiplicity of institutional orders is actively framed and constructed as such by Uber as an institutional entrepreneur. By putting forward its own constructs of field-level conditions, Uber attempted to de-legitimize current regulations. In particular, Uber framed current laws as outdated (as the law did not foresee the platform innovation) and irrelevant (by defining itself as part of a separate "tech" field instead of the taxi field).¹⁰ By contrast, the incumbent actors including the established taxi companies and regulatory authorities reasoned from the existing taxi regulations as the single most important institutional order, and, by doing so, attempted to de-legitimize the platform's UberPop service. This insight suggests that field-level conditions in institutional theory should not be understood as structural institutional conditions inherited from the past – and objectively observable as such – but rather as "semi-coherent" regime conditions subject to discursive struggles (Fuenfschilling and Truffer, 2014; Smith and Raven, 2012).

Finally, while we mainly focused on achieving legitimacy in the form of a regulatory institution (a new taxi law), our study also hints at the role of the materiality of platform innovation (Nambisan, 2017). A new platform does not only provide a new service for providers and users of a peer-to-peer service, but it also introduces a material infrastructure that platform companies use to regulate behaviors of platform participants. They act as a "private regulator" (Boudreau and Hagiu, 2009) by collecting reviews and banning providers and users that misbehave in the eyes of the platform company. A platform itself constitutes a material infrastructure, which in principle can be used to enforce field-level regulations as well as to collect taxes from practices that previously largely remained under the radar of tax authorities, if government would decide to delegate this authority to the platform. However, as became apparent in study, if the sunk costs and vested interests by incumbents in the pre-existing material standards are high, it is unlikely that a platform can easily overcome such lock-ins into technological standards (Cowan, 1990; Narayanan and Chen, 2012). Indeed, as past regulations have co-evolved with material infrastructures, the introduction of new regulations should not just overcome institutional inertia, but material orders as well. This is particularly the case in the case of platforms that peers use to trade physical (offline) services rather than digital (online) services.

Our single case study approach obviously has limited generalizability. Future research could scrutinize the specific characteristics of platform innovation in more depth, especially regarding the platform operator's strategies and the institutional responses by incumbents and governments. It would be particularly relevant to do comparative analyses as to better understand the specificities of platform innovations vis-à-vis regular product innovations. In addition, much is to be learnt from comparing the institutionalization process of the same type of platform innovation in different geographical contexts (cf. Uzunca et al., 2018). Such comparisons would highlight to what extent local contexts affect the effectiveness of institutional strategies by platform entrepreneurs.

Acknowledgements

This paper benefitted from comments by Lea Fuenfschilling, Marjolein Hoogstraaten, Matthijs Punt, Rob Raven, Taneli Vaskelainen and anonymous reviewers. The usual caveat applies. Koen Frenken received funding under the NWO Vici programme, number 453-14-014.

References

Bakker, S., 2014. Actor rationales in sustainability transitions – interests and expectations regarding electric vehicle recharging. *Environ. Innov. Soc. Transit.* 13,

⁹ In the context of platform innovation, some therefore speak of "reverse technology assessment" as the traditional order of technology assessment, formal regulation and market introduction is being reversed (Frenken and Schor, 2017).

¹⁰ Such strategic frames invoking alternative institutional orders are not only employed by Uber, but also by other platform startups active in food delivery platform Deliveroo (Butler, 2017) and homesharing platform Airbnb (McKee, 2017).

- 60–74.
- Battilana, J., D'ahunno, T., 2009. Institutional work and the paradox of embedded agency. In: Lawrence, T., Suddaby, R., Leca, B. (Eds.), *Institutional Work: Actors and Agency in Institutional Studies of Organizations*. Cambridge University Press, Cambridge, UK, pp. 31–58.
- Battilana, J., Leca, B., Boxenbaum, E., 2009. How actors change institutions: towards a theory of institutional entrepreneurship. *Acad. Manag. Ann.* 3 (1), 65–107.
- Benford, R.D., Snow, D.A., 2000. Framing processes and social movements: an overview and assessment. *Annu. Rev. Sociol.* 26 (1), 611–639.
- Bergek, A., Hekkert, M., Jacobsson, S., Markard, J., Sandén, B., Truffer, B., 2015. Technological innovation systems in contexts: conceptualizing contextual structures and interaction dynamics. *Environ. Innov. Soc. Transit.* 16, 51–64.
- Binz, C., Harris-Lovett, S., Kiparsky, M., Sedlak, D.L., Truffer, B., 2016. The thorny road to technology legitimation—institutional work for potable water reuse in California. *Technol. Forecast. Soc. Change* 103, 249–263.
- Bohnsack, R., Pinkse, J., Waelpoel, A., 2016. The institutional evolution process of the global solar industry: the role of public and private actors in creating institutional shifts. *Environ. Innov. Soc. Transit.* 20, 16–32.
- Boudreau, K.J., Hagiu, A., 2009. Platform rules: multi-sided platforms as regulators. In: Gawer, A. (Ed.), *Platforms, Markets and Innovation*. Edward Elgar, Edward Elgar, Cheltenham, UK and Northampton Mass, pp. 163–191.
- Bryman, A., 2015. *Social Research Methods*. Oxford University Press, Oxford.
- Clewlou, R., Mishra, G.S., 2017. *The Adoption, Utilization, and Impacts of Ride-Hailing in the United States*. Available via: Institute of Transportation Studies, University of California, Davis. https://itspubs.ucdavis.edu/wp-content/themes/ucdavis/pubs/download_pdf.php?id=2752.
- Cowan, R., 1990. Nuclear power reactors: a study in technological lock-in. *J. Econ. Hist.* 50 (3), 541–567.
- DiMaggio, P.J., 1988. Interest and agency in institutional theory. In: Zucker, L. (Ed.), *Institutional Patterns and Organizations*. Ballinger, Cambridge, MA, pp. 3–22.
- Dudley, G., Banister, D., Schwanen, T., 2017. The rise of Uber and regulating the disruptive innovator. *Polit. Q.* 88 (3), 492–499.
- Emirbayer, M., Mische, A., 1998. What is agency? *Am. J. Sociol.* 103 (4), 962–1023.
- Frenken, K., Schor, J., 2017. Putting the sharing economy into perspective. *Environ. Innov. Soc. Transit.* 23, 3–10.
- Fuenschingling, L., Truffer, B., 2014. The structuration of socio-technical regimes – conceptual foundations from institutional theory. *Res. Policy* 43 (4), 772–791.
- Fuenschingling, L., Truffer, B., 2016. The interplay of institutions, actors and technologies in socio-technical systems—an analysis of transformations in the Australian urban water sector. *Technol. Forecast. Soc. Change* 103, 298–312.
- Garud, R., Jain, S., Kumaraswamy, A., 2002. Institutional entrepreneurship in the sponsorship of common technological standards: the case of Sun Microsystems and Java. *Acad. Manag. J.* 45 (1), 196–214.
- Gawer, A., 2014. Bridging differing perspectives on technological platforms: toward an integrative framework. *Res. Policy* 43 (7), 1239–1249.
- Geels, F.W., 2002. Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case-study. *Res. Policy* 31 (8), 1257–1274.
- Hinings, B., Gegenhuber, T., Greenwood, R., 2018. Digital innovation and transformation: an institutional perspective. *Inf. Organ.* 28 (1), 52–61.
- Kaplan, S., Tripsas, M., 2008. Thinking about technology: applying a cognitive lens to technical change. *Res. Policy* 37 (5), 790–805.
- Kenney, M., Zysman, J., 2016. *The rise of the platform economy*. *Issues Sci. Technol.* 32 (3). <http://issues.org/32-3/the-rise-of-the-platform-economy/>.
- Klein Woolthuis, R., Hooimeijer, F., Bossink, B., Mulder, G., Brouwer, J., 2013. Institutional entrepreneurship in sustainable urban development: Dutch successes as inspiration for transformation. *J. Clean. Prod.* 50, 91–100.
- Kukk, P., Moors, E.H.M., Hekkert, M.P., 2016. Institutional power play in innovation systems: the case of Herceptin®. *Res. Policy* 45 (8), 1558–1569.
- Latour, B., 1983. Give me a laboratory and I will raise the world. In: Knorr-Cetina, K., Mulkay, M. (Eds.), *Science Observed*. Sage, London, pp. 141–170.
- Lawrence, T.B., Suddaby, R., 2006. Institutions and institutional work. *The Sage Handbook of Organization Studies*, vol. 2. pp. 215–254.
- Mair, J., Reischauer, G., 2017. Capturing the dynamics of the sharing economy: institutional research on the plural forms and practices of sharing economy organizations. *Technol. Forecast. Soc. Change* 125, 11–20.
- Markowitz, L., 2007. Structural innovators and core-framing tasks: how socially responsible mutual fund companies build identity among investors. *Sociol. Perspect.* 50 (1), 131–153.
- Micelotta, E., Lounsbury, M., Greenwood, R., 2017. Pathways of institutional change: an integrative review and research agenda. *J. Manage.* 43 (6), 1885–1910.
- Misangyi, V.F., Weaver, G.R., Elms, H., 2008. Ending corruption: the interplay among institutional logics, resources, and institutional entrepreneurs. *Acad. Manag. Rev.* 33 (3), 750–770.
- Moors, E.H.M., Fischer, P.K., Boon, W.P.C., Schellen, F., Negro, S.O., 2018. Institutionalisation of markets: the case of personalised cancer medicine in the Netherlands. *Technol. Forecast. Soc. Change* 128, 133–143.
- Munir, K.A., Phillips, N., 2005. The birth of the 'Kodak Moment': institutional entrepreneurship and the adoption of new technologies. *Organ. Stud.* 26 (11), 1665–1687.
- Nambisan, S., 2017. Digital entrepreneurship: toward a digital technology perspective of entrepreneurship. *Entrep. Theory Pract.* 41 (6), 1029–1055.
- Narayanan, V.K., Chen, T., 2012. Research on technology standards: accomplishment and challenges. *Res. Policy* 41 (8), 1375–1406.
- Pacheco, D.F., York, J.G., Dean, T.J., Sarasvathy, S.D., 2010. The coevolution of institutional entrepreneurship: a tale of two theories. *J. Manage.* 36 (4), 974–1010.
- Perkmann, M., Spicer, A., 2007. 'Healing the scars of history': projects, skills and field strategies in institutional entrepreneurship. *Organ. Stud.* 28 (7), 1101–1122.
- Perkmann, M., Spicer, A., 2008. How are management fashions institutionalized? The role of institutional work. *Hum. Relat.* 61 (6), 811–844.
- Rayle, L., Dai, D., Chan, N., Cervero, R., Shaheen, S., 2016. Just a better taxi? A survey-based comparison of taxis, transit, and ridesourcing services in San Francisco. *Transp. Policy* 45, 168–178.
- Reischauer, G., Mair, J., 2018. How organizations strategically govern online communities: lessons from the sharing economy. *Acad. Manag. Discov.* 4 (3), 220–247.
- Rogers, B.C., Brown, R.R., de Haan, F.J., Deletic, A., 2016. Analysis of institutional work on innovation trajectories in water infrastructure systems of Melbourne, Australia. *Environ. Innov. Soc. Transit.* 15, 42–64.
- Scott, W.R., 1995. *Institutions and Organizations*. Foundations for Organizational Science. Sage, London.
- Seo, M.G., Creed, W.D., 2002. Institutional contradictions, praxis, and institutional change: a dialectical perspective. *Acad. Manag. Rev.* 27 (2), 222–247.
- Smith, A., Raven, R., 2012. What is protective space? Reconsidering niches in transitions to sustainability. *Res. Policy* 41 (6), 1025–1036.
- Strang, D., Meyer, J.W., 1993. Institutional conditions for diffusion. *Theory Soc.* 22 (4), 487–511.
- Su, J., Zhai, Q., Karlsson, T., 2017. Beyond red tape and fools: institutional theory in entrepreneurship research, 1992–2014. *Entrep. Theory Pract.* 41 (4), 505–531.
- Suchman, M.C., 1995. Managing legitimacy: strategic and institutional approaches. *Acad. Manag. Rev.* 20 (3), 571–610.
- Thelen, K., 2018. Regulating Uber: the politics of the platform economy in Europe and the United States. *Perspect. Polit.* 16 (4), 938–953.
- Tzur, A., 2017. *Uber Über Regulation? Regulatory Change Following the Emergence of New Technologies in the Taxi Market*. Regulation & Governance <https://doi.org/10.1111/rego.12170>. Online First.
- Uzunca, B., Rigtering, J.C., Ozcan, P., 2018. Sharing and shaping: a cross-country comparison of how sharing economy firms shape their institutional environment to gain legitimacy. *Acad. Manag. Discov.* 4 (3), 248–272.
- Van den Belt, H., Rip, A., 1987. The Nelson-Winter-Dosi model and the synthetic dye chemistry. In: Bijker, W.E., Hughes, T.P., Pinch, T. (Eds.), *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*. MIT Press, Cambridge, pp. 159–190.
- Van Dijk, J., Poell, T., de Waal, M., 2018. *The Platform Society*. Public Values in a Connective World. Oxford University Press, Oxford.
- Zelizer, V.A., 1978. Human values and the market: the case of life insurance and death in 19th-century America. *Am. J. Sociol.* 84 (3), 591–610.