

Looking for Glitches in Mobility Platforms

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“[...] the glitch trains the eye on those
space-times where platforms don't
seem right”

Leszczynski 2020: 201

Introduction

This article and the narrative it presents originated from an Uber trip in Hamburg (Germany) from the city's central train station to the Elbphilharmonie concert hall in June 2021. I had arranged the trip in order to experience mobility platforms in an everyday setting, to identify their potential to open up emancipatory practices, and to explore a specific theoretical approach. In the pages below, I combine a selective reading of platform urbanism, which focuses on everyday contradictions and Legacy Russell's concept of *glitch feminism* (2020), with a sectoral focus on mobility platforms.

The concept of platform urbanism describes the production of urban space, that is influenced by platforms and a corresponding platform logic. The term platformization refers to platforms' growing societal influence and their permeation into almost all aspects of (urban) life. My reading of platform urbanism derives from and is largely influenced by Legacy Russell's (2020) concept of glitch feminism and its application in feminist geography by Agnieszka Leszczynski (2020). Leszczynski uses the concept of the *glitch* to offer an alternative theorization of the platform-mediated production of urban space. She highlights the dynamic and incomplete nature of platform urbanism, which opens up opportunities for “everyday digital praxes that remake, unmake, and make differently platform/city interfaces” (Leszczynski 2020: 202). Following Russell and Leszczynski, I look for glitches that can expose underlying contradictions in urban platforms, searching for ways

to envision more hopeful platform futures than the dystopian, totalizing scenarios depicted by platform capitalism (Leszczynski 2020). In doing so, I view platform urbanism mainly as a phenomenon of the urban everyday, and platforms as “ecosystems of mundane connectivity and interaction” (Leszczynski 2020: 190).

I combine this reading of platform urbanism with a critical analysis of mobility platform infrastructure and the consequences of the mobility sector’s ongoing platformization. Describing these processes, I focus on platform-mediated mobility infrastructures as systemized by Stehlin, Hodson, and McMeekin (2020). Because of their inherently material characteristics and the unavoidable friction that arises when platform companies try to implement their services across a range of different urban spaces, mobility platforms are a central focal point through which we can detect contradictions in platform urbanism as a whole. Thus, looking for glitches in mobility platforms can be a fruitful way to identify the emancipatory potentials in platform urbanism and the processes of platformization. To apply this approach, I used a qualitative and explorative research approach centered on autoethnographic observations during an Uber ride. From these observations, I deduced three scenes and then wrote a narrative for each scene, situating it within the context of platform urbanism and adding background information when necessary.

The text is structured as follows. In the following section I contextualize my argument by surveying the scholarly literature on my chosen theoretical and methodological approach. In section two, I illustrate my reading of platform urbanism and outline the concept of glitch feminism. In section three, I discuss how mobility platforms work in the context of platform urbanism and the fact that mobility platforms are inherently material and error-prone, making them vulnerable to technological or material malfunction, contradictions, and unintended usage – and thus to glitches. In section four, I present three scenes from my Uber trip and offer a short interpretation of each, identifying three different kinds of glitches that represent moments with emancipatory or critical potential when investigating mobility platforms. To conclude, I summarize the points made in sections two, three, and four and suggest topics for further investigation that may yield theorizations that highlight emancipatory potential in platform-mediated urban infrastructures.

Glitches in the everyday workings of platform urbanism

The starting point of my analysis is a specific focus on contradictions and glitches in the everyday roll-out of platform technologies in the context of platform urbanism. The implementation of platform infrastructures is often framed as a smooth, seamless process, ignoring the many frictions that accompany this process. But in the words of Leszczynski (2020: 200) “platform urbanism is not only a project of imperfect ambition [...], but one which is also incomplete”. This implies that there is a divergence between claim and reality. The goal here is not only to point out and criticize social inequalities and discrimination, but also to frame the corresponding disruptions and contradictions that enable individual actors to appropriate these glitchy conditions for their own benefit.

To find these disruptions, Leszczynski and others propose to focus on everyday (urban) experiences. The basic premise here is that the incompleteness of the platform urbanism project can be found in many everyday aspects of urban life, which is messy and unpredictable. Following that idea, both Leszczynski and Barns assign a specific kind of agency to people's everyday interactions with platform surfaces. This focus on individual agency runs counter to the idea of the above mentioned dystopian, totalizing scenarios of platform capitalism that tend to predominate in academic discussions of the topic (Leszczynski 2020: 208). In the face of such universalistic platform visions, individual action is still deemed important and influential within the datafied co-creation of the city (Barns 2020: 13; Leszczynski 2020: 200). It allows us to envision a more hopeful platform future, one built around everyday action (Leszczynski 2020: 189).

Following up on these studies, I refer to the concept of glitch feminism developed by Legacy Russell (2020) to conceptualize the incompleteness of the platform urbanism project. Glitch feminism offers “a way to work, understand and interact with digital material to make sense of the often-contradictory nature of a digitalized world” (Russell 2020: 135) – including the world of platform urbanism. Russell's manifesto defines the glitch as an analytical concept that can help researchers navigate the contemporary dynamics of digitization, the interaction between and close connections between the online/off-line worlds. Derived from the linguistic origins of the Yiddish *gletsn* (to slide, glide, slip) and the German *glitschen* (to slip), the concept refers to a sense of movement – or slipping – beyond and between binary categories (Russell 2020: 28). This focus on movement shifts our focus beyond the standard defi-

inition of the word *glitch* as “a technological error”, viewing it instead as a positive starting point from which to begin questioning existing social and technological routines and conventions. The concept of the glitch has already been applied in feminist geography by Agnieszka Leszczynski (2020) and Sarah Elwood (2020; Elwood/Leszczynski 2018). In the pages below, I draw on this broader definition of the glitch and its existing applications in feminist geography. My analysis starts from a classic reading of glitches as technological malfunctions and continues to societal and interpersonal irritations that indicate when platform infrastructures “don’t seem right” (Leszczynski 2020: 201). In the words of Russell (2020: 29): “a glitch is something that extends beyond the most literal technological mechanics: it helps us to celebrate failure as a generative force, a new way to take on the world.”

Mobility platforms in the context of platform urbanism

For several reasons, I chose mobility platforms as my research object. Glitches might occur in any other type of platform infrastructure, but I deem the mobility sector as a fitting test case for the purposes of this study because of its relevance to everyday urban interactions, the strong influence of global platform companies such as Uber, and the sector’s inherently material characteristics, which make the occurrence of glitches more likely. In this section, I want to point out some of the consequences of the ongoing digitization of the mobility sector.

Stehlin, Hodson, and McMeekin (2020) point out several characteristics of the mobility sector that support this connection between the mobility sector and research on platforms. First and foremost, they highlight the specific materiality of mobility platforms in urban contexts which gives concrete form to the manifold material and social connections between the platform and the city (Stehlin/Hodson/McMeekin 2020: 1255). They also join other authors in framing mobility as a constituting factor of social life (Cresswell 2010; Sheller/Urry 2006) and as a key dimension of socio-spatial and transport-related inequality and exclusion (Lucas 2012). Mobility can be seen as a socially relevant phenomenon since it is interwoven with almost every aspect of everyday urban life. Mobility is a key signifier for living standards and social (in)equality inside a city.

Like all other sectors of the urban infrastructure, the mobility sector is currently undergoing processes of platformization. Although in many ways

the influence of platform companies exacerbates already-existing tendencies, it also poses new questions. Looking at the platformization of mobility, Stehlin, Hodson, and McMeekin (2020) identify a range of different strategies and developmental trends, from ride-hailing companies like Uber, which exploit mobility gaps by building on existing informal mobility practices, to state-wide mobility infrastructure programs that focus the large-scale implementation of new mobility platform technologies. This article focuses on ride-hailing services like Uber. Ride-hailing in its original meaning encompasses “the activity of asking for a car and driver to come immediately and take you somewhere, or a service that lets you do this” (Cambridge Dictionary 2021). This form of mobility takes different forms in different regulatory and institutional contexts, which leads to varying degrees of friction during the service’s implementation in each context – and thereby to possible glitches.

This relationship between new mobility platforms and existent mobility infrastructure, as one finds in many ride-hailing companies, can also be described through the interplay between two contradictory processes inherent to the workings of platform urbanism: the infrastructuralization of platforms and the platformization of infrastructures. The former describing a process in which platforms provide indispensable infrastructural societal services, the latter referring to the colonization and/or transformation of extant infrastructures by platforms (Leszczynski 2020: 192). As Stehlin, Hodson, and McMeekin point out, companies like Uber use and exploit existing services (such as taxis or personal cars) by incorporating them into the platform. This setup enables the platform company to frame itself not as the owner, but only as a mediator between independent drivers and their customers (Stehlin/Hodson/McMeekin 2020: 1257).

Illustrating this relationship, Pollio (2021) is exploring the interdependencies between Uber and international airports on the basis of two ethnographic field studies in Cape Town and Mumbai. In contrast to the narrative of being merely a mediator platform, Uber is extending its services into physical space by logistically organizing the matching-up of ride-hailing customers and their designated Uber cars. This process relies on the existing airport infrastructure and is enabled by small material adaptations. These adaptations include, for example, easily visible signs (installed by Uber) that point passengers towards a specific pick-up area, which itself is also referenced in the app.

Another consequence of platformization and ongoing digitization in the mobility sector is the exacerbation of mobility-related social exclusion. As Sören Groth (2019) has shown, smart mobility trends are aggravating mo-

bility-related social exclusion tendencies. Analyzing processes of digitization specifically within the context of transportation, Groth frames this technology-driven intensification of social inequalities as multimodal divide – that is, a social rift in which the already-existing tendency towards a digital divide is intensified by the multiple modal options that transportation users face, all of which work together to reproduce mobility-related social exclusion. Thus, people with few transport mode options sometimes also lack the technological requirements to take part in platform-mediated mobility infrastructures. In this regard, the need to possess a functioning smartphone and a connected credit card for flexible payment potentially prevent them from participating in new mobility services. Even as smartphone possession becomes more and more ubiquitous, mobility apps and platform services in general still require an updated and technologically full-functioning device. Maintaining and updating such devices, moreover, is often expensive and requires technological expertise.

Finally, all of these processes related to the digitization of mobility find material expression in urban spaces. Because mobility infrastructures are inherently material, mobility platforms are omnipresent in public space. Thus, one would expect a certain amount of friction and malfunction to arise when such platforms are deployed and implemented in differing urban contexts. If so, the digital *quick fix* that companies engaged in the platform-mediated mobility infrastructure often tout as a cure-all for urban mobility infrastructural problems seems utopian, and without consideration for the different regulatory and material conditions of different urban spaces. This notion of the *fix* opposes the concept of the glitch, with the *fix* being the solution to a sometimes rather imaginary problem, and the glitch being the crack in a seemingly perfect system and the angle on which to base possible emancipatory practices.

Finding glitches in mobility platforms

Following the concepts summarized in sections two and three, I set out to look for glitches in the workings of mobility platforms. To do so, I focused on everyday interactions between the platform, urban space, and myself in an explorative observation. The focus on ride-hailing platforms like Uber offered the advantage of being able to build on an existing rich corpus of discussion

in the field of critical urban studies and to investigate this specific type of service within a local context.

The following scenes emerge from a single auto-ethnographic observation. They each show one dimension of a very short quotidian event: a person leaving a train station books a ride on her/his phone, and then exits the station. Every short scene is followed by associations and contextualizations about the things I felt and observed during my trip. To further contextualize the scenes, I add relevant theoretical and empirical information geared towards the key issues concerning the rolling-out of mobility platforms in practice.

Immersion in my phone

When I took out my phone in front of the train station, I tried to act normal – as though this were something I did every day. I had downloaded the FreeNow¹ application to experience platform urbanism firsthand. I was excited and a little nervous. When I opened the app and tried to book a ride, an error message immediately popped to inform me that the service wasn't operating in this area. Under normal circumstances I would have immediately switched to another mode of transportation, but since my plan was to use the service of a platform-mediated ride-hailing service my trip took another direction.

So, I downloaded the Uber app. As I knew from my previous research, the company has been operating in Germany for some years. They always faced heavy legal and societal pushback, but managed to expand service to several German cities. As a (or rather *the*) ride-hailing platform, Uber met the criteria I set out to investigate.

To gain access to the platform, I had to download the application to my phone and re-establish the connection to my account, which I had created years ago. I also had to reconnect the payment option and update my personal data. All of this was done on-the-fly, while standing in front of the train station as many taxis, cars, and travelers went by. My behavior in this instance was the complete opposite of what one would expect of train station

1 FreeNow (formerly known as mytaxi) was founded in 2019 and is part of the ridehailing joint venture by the BMW Group and Daimler AG (FreeNow n.d.).

behavior. While everyone else was busy catching their train or getting on a taxi, I was temporarily stuck inside my own – or my phone's – limitations.

After several minutes, I was set to book the ride. I remembered Uber experiences from other countries and had a similar feeling. The communication with the app and the driver were like how it worked in the US. After booking the ride, I could see the available cars as small symbols on my screen and watch to see whether they would choose to pick me up or not. After I was matched, I could see the symbol on the screen coming towards me.

By now I was completely detached from my surroundings, fully immersed in the app and the task at hand. I sent further information on my location to the driver, and a few moments later I got a call.

This first scene starts with a glitch – an irritation in the smooth interface of the app. The platform app I had planned to use did not work, and I had to find another way. The app's malfunction causes a change of plans, which already speaks to the fact that users should be able to navigate the digital and physical mobility landscape, should be aware of the different modes of travel available to them, and should know about the technological requirements for their use. Since my investigation of platform-mediated mobility service required that I use a ride-hailing service, I looked for an alternative that would fulfill the conditions of my research design. Of course, I could have used a service of the Hamburg public transport system, but I wanted to stick to my plan. So, after downloading and re-connecting with the Uber app, everything concerning my ride until the arrival of my car took place inside my smartphone. The malfunction of one app and the process of immersion into another app exemplify the user's dependency on a working smartphone while navigating the platform-mediated mobility landscape.

Here, I refer to the different dynamics of mobility-related social exclusion and the multimodal divide (Groth 2019; Lucas 2012) that are increased by the individual's growing dependency on platforms and digital interfaces while using the mobility infrastructure. Raising the bar of access to mobility infrastructures means that some people can be excluded. Technological malfunctions that require spontaneous reactions, such as those I experienced in this scene, are only the most obvious modes of exclusion from new platform-mediated mobility services. The most important and most relevant requirement in this first scene would be the possession of a smartphone and the

required connection to an online payment system or possession of a credit card. This shows that ride-hailing services like Uber intensify social exclusion on a most basic level, which is not surprising because apps like these implicitly don't target people who are already marginalized and disadvantaged regarding the provision and usage of mobility options relative to other user groups. Given these platforms' own claim that their services positively intervene in society and enrich the mobility mix, it should be taken into consideration. In this sense, finding and tracing the glitch uncovers inequality in the provision and possible usage of the platform infrastructure.

Optical illusions

When I arrived at the train station where my trip was supposed to start, I randomly chose one of the exits and found myself standing next to a taxi parking spot. I stood beside a long line of waiting taxis. The drivers were either waiting in their cars, cleaning the windows of their taxis, or talking to each other. Under normal circumstances I wouldn't have recognized anything special about this situation. But in this context, in which I had specifically planned not to use a traditional taxi service but rather a platform-mediated service, I felt some sense of guilt. This feeling intensified as I watched the Uber car, I had ordered drive past the line of waiting taxis. Normally, as a rule the first taxi in line would get the next customer. The Uber minibus looked exactly like other taxis and there was no way to distinguish it from other taxis except for the way that it drove past the queue, and a sticker (Uber cars have such stickers on the windshield or on the side of the car) indicating that it was driving for Uber.

Not only did it feel awkward to see my Uber car drive past the waiting taxis, but I also realized that I had accidentally booked a minibus for myself, which was supposed to carry up to four passengers in the back. Even if it didn't bother anyone, I felt the gazes of the waiting taxi drivers while I got into the minibus and sat in the back seat of my own private platform-mediated mobility option.

During this encounter I was struck by the spatial proximity of two opposing business models, which are only distinguishable by the behavior of their drivers and the position of their cars at a train station – one waits, the other

drives by. In this scenario, two cars look visually the same, but are embedded in two opposing institutional contexts.

The most apparent glitch in this scenario is the visual overlap between the different (yet similar) kinds of mobility services and their contrasting kinds of institutional embeddedness, an embeddedness that materializes in the form of urban spaces and in the working conditions of the drivers. The seemingly clear distinction between the categories of *taxi* and *non-taxi* are visually blurred through the almost identical appearances of the cars. This overlap serves as entry point for examining the specific characteristics of Uber Germany that underlie and give rise to this glitch or disruption. For this we will need a brief overview of the strategies deployed by Uber in Germany.

The Uber company has battled a wide range of different institutional actors, at both the local and national levels, concerning the legality of its business model and the working conditions and required skills of its drivers (Stehlin/Hodson/McMeekin 2020: 1257). Unsurprisingly, the same goes for Uber Germany. First, Uber Germany claims not to offer any mobility service and does not see itself as responsible for the ride itself. Rather, it frames itself as a mediator between customers and independent and licensed *Mietwagen-unternehmern* (rental car entrepreneurs) (Uber Deutschland 2020). A German federal court ruled in 2019 that Uber would need a legible rental car concession because the company – although they seemingly only connect customer with independent drivers – seems to the customer like the provider of the service. Also, it pre-selects the specific driver and states the price of each ride. Since then, Uber has been operating through one general entrepreneur, under whom every driver in Germany works as sub-contractor. Taxi driver unions see this as an insufficient solution and still frame Uber's activity as illegal (Handelsblatt 2021). Many Uber drivers, they claim, still find ways to get around the changes made in the jurisdiction (Taxi Deutschland 2021).

Uber Germany (2020) has countered these accusations and what they imply about the company's relationship towards the existing taxi infrastructure in Germany. Apart from assuring critics that all Uber drivers are properly insured, secured, and skilled, the company also claims that the direct mediation of the app and the resultant high level of sufficiency enables it to offer rides that are cheaper than taxi rides. The company also notes its positive impact on broader societal and urban issues related to the connection between city centers and urban peripheries, and its contribution to climate protection. These observations suggest that Uber sees itself as offering material and

systemic fixes to existing problems, like car congestion and peripheralization, that go beyond the role of a simple mediator. In its projected self-image, Uber portrays itself as filling some sort of gap by adding a valuable feature to the mobility mix in Germany.

This notion of filling a gap or fixing a relevant problem is typical of the narrative framings that companies like Uber promote about their platforms (see previous chapter: “Mobility platforms in the context of platform urbanism”; Stehlin/Hodson/McMeekin 2020). To put this in a broader context, Lizzie Richardson asks: “What is the question to which the concept of platform urbanism claims to be an answer?” Referring specifically to Uber, she states that the only new element that the company offers is the corresponding app (Richardson 2018). It becomes clear that platforms – and especially mobility platforms – “are dependent upon a host of other arrangements that are outside of their control” (Richardson 2018). In the case of mobility platforms, these “other arrangements” beyond the platform’s control might include elements of the existing transport infrastructure (like taxi companies or road networks) that are necessary to the proper functioning of ride-hailing app services. On the surface, therefore, the working of Uber Germany effectively illustrates how the platformization of infrastructure can arise through a process of colonizing and transforming existing services and resources – in this case, the existing German taxi infrastructure.

The situation of Uber in Germany and the conflict between this platform company and the taxi industry serves as an example of a multi-faceted and long-lasting process of adaption, conflict, and (re-)negotiation between a platform company, other businesses, and local and national political institutions. In witnessing the material process of negotiation in situ as the Uber car I had ordered drove by the other taxis, I felt like the conflict had manifested itself before my own eyes. Such small situations are embedded in this larger process of platformization, and they (re-)produce new situations while also potentially disrupting the flow of urban life. The gray areas that are explored in these spaces that lie between taxi companies and Uber may shed some light on new modes of cooperation and overlap that might diverge from the drastic positions of each side.

(Not) being one’s own boss

When I entered the car, I sat down at the right back end where I could see the driver’s face through the rear-view mirror. Between my area and the driver’s

seat there was a transparent plastic sheet and a COVID information sheet. I noticed the taxi meter under the rear-view mirror and thought about the function of the Uber app, which fixes the price of the ride in advance. Right next to the driver there were two phones attached to the car dashboard. I could see that there were two different apps running on the phones. One of them was the Uber app. Inspired by this observation, I started a conversation. I asked the driver if he was only driving for Uber. He answered that he was self-employed. He is driving for Uber as well as for FreeNow. I said: "The app wasn't working earlier so I switched to Uber." He answered that the app indeed was working earlier the same day and that these temporary malfunctions sometimes happen. He added that he had already given some rides for FreeNow that same day.

After hearing from him that he was self-employed, I asked him if he owned the car we were riding in – since it looked a lot like a normal taxi. He said: more or less. After two years it will be his, he explained, and then he will get something out of it. I assumed that he must be in a leasing contract with a rental car company or taxi agency. He pointed out that he is satisfied with his current mode of employment. In contrast to working for a taxi company, he said that he is his own boss and can decide when to take which ride. By using both apps at the same time, he can decide spontaneously whether to use one or the other app and make more profit.

All in all, he seemed confident and positive in the way he told me his story. He seemed determined in what he was doing. He also seemed open to talk about his working conditions and share his experience.

In this scene, the glitch manifests in the contradiction between Uber's proclaimed image of independent, skilled, and financially and socially secured drivers and the more differentiated and complex reality represented in the scene. The driver was working for different platforms at the same time while being "his own boss" and while still being dependent on good ratings on the app and obliged to pay off his car debt. The challenge here is to move beyond this binary of entrepreneurialism and exploitation and look for contradictions and dissonances (see Mazumdar 2021), as well as the potential for resistant and emancipatory behavior and signs of agency in the driver who sits between both binary poles.

The information gathered on the first two scenes now connects in the person of the driver. He situates himself in the context of platform capitalism in a way that can neither be classified as (self-)exploitation nor as a pure success story of entrepreneurialism. These two alternatives create binary categories that can be overcome by zooming in and closely examining the different forms of embeddedness. In the case of a technological glitch (such as when one app does not work properly), the driver can use the other one and still make money. He manages to find a strategy that enables him to bypass technological glitches to some extent, simply by using an alternative. Moreover, he uses the flexible business model by Uber and FreeNow to his own advantage: as the driver indicates, he is satisfied with the freedom and profit surplus that these two apps offer him in comparison to taxi apps. As I have shown, it is worthwhile to move beyond these binaries and focus on grey areas.

Conclusion

The descriptions and reflections on the three scenes presented in this text show the multi-layered nature of mobility platforms and the complex and sometimes contradictory everyday entanglements of individual actors in platform urbanism narratives. By observing and analyzing three kinds of glitches in the platform interface, experienced in the context of a single everyday interaction within an urban platform infrastructure, I was able to show the rich potential that a close observation of intra-urban entanglements that are mitigated through mobility platforms can uncover. Unjust mobility provision certainly is one part of dystopian platform futures, but it is important to focus exactly on ways through which these can be understood, anticipated, and prevented.

In this process, the mobility sector has proven to be an excellent example of the material, discursive, political, and social entanglements of platform infrastructures. The claim of the fix and the reality of the glitch, as well as the processes of infrastructuralization of platforms and platformization of infrastructures, can perfectly be exemplified by rapidly emerging mobility platforms. Mobility platforms like Uber frame themselves as being part of the solution that will lead us towards a more sustainable mobility, but they don't consider the friction that automatically ensues when the service is implemented within existing regulatory and political contexts. Rather, they offer a fix that automatically gives rise to a multitude of glitches. These can serve

as evidence for existing social inequalities, on the one hand, while they serve as point of appropriation and unintended usage of their service, on the other.

Although I was able to present an approach to the study of platform-city relationships from a small-scale, exploratory perspective that focused on mobility platforms, it remains for other studies to apply this approach to different topics that go beyond the rather material approach I chose in this text. Scene three has shown the research potential of studying how actors can (spontaneously) appropriate platform infrastructures to fulfil their own goals and agendas. This might encompass actors using technological glitches for their own benefit or undermining the platform companies' algorithmic control by different forms of social organization. In exploring these and other topics, upcoming research should apply an intersectional lens – for example, by zooming in on gender and race inequality in the provision and usage of ride-hailing services.

Lastly, in addition to these diagnoses of glitches in moments where mobility platforms 'don't seem right', more work must be done on platform futures in which individual agency continues to matter (Leszczynski 2020). The story of the driver in scene three has shown the potential insights to be gleaned from exploring the gray areas between exploitation and entrepreneurialism and suggests that platform logics haven't fully replaced the everyday strategies of the individual actors navigating these urban infrastructures. Prioritizing their strategies and looking beyond simple binaries might be one way to identify new ways of reinterpretation, (re-)appropriation, and resistance of platform infrastructures in the mobility sector and in general.

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