

The Organization of Digital Marketplaces:

Unmasking the Role of Internet Platforms in the Sharing Economy

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Established economic practices and social relations currently face the pressures of what has recently become known as the *platform economy* (Kenney & Zysman, 2016). The word ‘platform’ is used in a variety of ways (Langley & Leyshon, 2016) and refers to what Evans and Gawer (2016) generally term ‘transaction platforms’. Some social media platforms such as Facebook or YouTube post content mainly to host user communities. Other Internet platforms provide digital marketplaces for paid transactions, ranging from crowdsourcing of creative ideas to the digital sale of products and services (Langley & Leyshon, 2016; Aspers & Darr, 2017). Focusing on digital marketplaces, the platform economy provides socio-technical infrastructures that facilitate new forms of Internet intermediation between buyers and external sellers that are not directly employed or contracted by the platform. Many of these digital marketplaces introduce novel economic practices.

Several prominent and successful organizers of digital marketplaces depict themselves as a part of the *sharing economy* – a general term that evokes non-market notions of a community orientation, empowerment, and social transformation (Schor, 2014; Mair & Reischauer, 2017) and revolves around the basic idea that existing goods and services are shared or traded with others in a peer-to-peer fashion, eliminating intermediaries from value distribution (Schor & Fitzmaurice, 2015). In stark contrast, platforms such as Airbnb (for temporary accommodation), Rover (for pet sitting), Getaround (for car sharing), Uber and Lyft (for ride

sharing), TaskRabbit (for freelance handy home tasks and driving) or Vinted (for second-hand clothes and accessories) are regularly equated with the sharing economy and often display a clear for-profit orientation. These for-profit platforms shift such transactions as ordering a ride or renting short-term lodging away from the established, orderly, and regulated world of formal organizations. Numerous platforms exist transnationally and locally. Precise figures are difficult to acquire, but global revenues derived from the sharing economy in five sectors – travel, car sharing, finance, staffing, and music and video streaming – are estimated to increase from about USD 15 billion (~EUR 12 billion) in 2015 to some USD 335 billion (~EUR 275 billion) by 2025 (PricewaterhouseCoopers, 2015). These sharing-economy marketplaces depart from a world of internal labour markets and state-regulated market rules. Instead, transactions are performed in the form of largely unregulated, individualized market relationships that quickly scale up because they thrive on monopoly-prone network effects (Cusumano, 2015; Kenney & Zysman, 2016). With their underlying business model built upon monetizing consumer assets and human effort, these for-profit sharing-economy platforms constitute a radical shift away from established social orders (Kenney & Zysman, 2016).

From the perspective of economic sociology, market actors need to solve central coordination problems to facilitate a sufficiently stable market order (Fligstein, 2001; Beckert, 2009). Yet stabilizing a viable digital market order is significantly more complicated than creating stabilization in traditional markets because of the specific properties of the Internet. Market participants face high uncertainty, for example, because it is difficult to build mutual trust as a basis for co-operation, because competition is fierce, and because demand can fluctuate substantially (Brinkmann & Seifert, 2001; Diekmann & Przepiorka, 2017; Belk, 2014; Dolata, 2015; 2017; Hartl, Hofmann & Kirchler, 2016; Kirchner & Beyer, 2016). Whereas these conditions theoretically inhibit orderly market transactions, sharing-economy

platforms operate successfully because their providers have found a way to create and operate a new kind of market order.

We posit here that the key to understanding the social structures of sharing-economy platforms is to analyse them as digital marketplaces created and operated by market organizers. According to this understanding, digital marketplaces constitute an extended case of general market models (Beckert, 2009). Whereas general market models comprise at least three actors – one buyer and two competing sellers, for example – market orders of digital marketplaces require an additional fourth actor: the market organizer. The market organizer facilitates market transactions by creating and operating a market order for external sellers and buyers. (See Evans, 2011; Langley & Leyshon, 2016.) Thus the digital marketplaces of the sharing economy also represent a specific case for the organization-of-markets approach (Ahrne, Aspers & Brunsson, 2015). This approach suggests an investigation of specific organizational elements in order to reveal underlying mechanisms of co-ordination and social order in markets.

In this article we address these issues by approaching the problem of market-order creation and the elements of market order as a question of the organization of markets (Ahrne *et al.*, 2015), by drawing on two exemplary cases – Lyft and Airbnb – both adequately described as ‘profiteers’ (Ahrne *et al.*, 2015) because they earn money by raising fees for market transactions. We first consider the efforts of market organizers to create new market orders on their digital marketplaces by mobilizing participants and resources. We then analyse the elements of organization that these market organizers install in order to operate their digital marketplaces continuously. All in all, we show that although they use the rhetoric of sharing, Internet platforms in the sharing economy generate enormous profits by establishing order on digital marketplaces using the five elements of organization. Specifically, and noteworthy from the perspective of partial organization, all five organizational elements are implemented

in a specific configuration that allows these market organizers to scale up their operations quickly and cheaply, simultaneously securing a powerful intermediary position.

1. Creating a New Market Order: The Cases of Airbnb and Lyft

Following our proposed perspective, the market organizers of the sharing economy face a challenging problem of creating a new market order. Whereas ‘regular’ digital marketplaces like Booking.com or online services for regular taxi drivers often merely apply a digital format to extant professional sellers, the sharing economy challenges established market orders more substantially. Market organizers of the sharing economy like Lyft and Airbnb primarily organize sellers with no specific qualifications to offer services using such private resources as a private car or a private spare bedroom. This process transforms previously non-market resources into market objects. The attempt to construct amateurs as competitive sellers and to commodify their private resources for a digital marketplace constitutes a considerable departure from established market orders.

Established market orders do not change easily, however. Market orders typically exhibit a taken-for-granted character because they build on a shared understanding of who the market actors are and how they should interact with each other (Fligstein, 2001). So how do market orders change? Fligstein (2001) and Rao (2008) argue that social-movement-like activities can bring about substantial change in markets and facilitate the creation of new market orders. (See also Davis & Thompson, 1994; Schneiberg & Soule, 2005; Schneiberg, King & Smith, 2008; Schneiberg & Lounsbury, 2008.) To subvert established taken-for-granted models, challengers need to theorize an alternative market order and mobilize participants and resources to facilitate diffusion. *Theorization* involves the development of ‘abstract categories’ and ‘patterned relationships’ (Strang & Meyer, 1993). Thus theorization

constructs specific types of actors, including specific identities and roles, and provides an alternative frame to make sense of new activities. Theorization ties in with opportunities for mobilization. Social movement studies (Snow, Rochford, Worden *et al.*, 1986; Schneiberg & Lounsbury, 2008) posit that certain frames (see Goffman, 1977; Snow *et al.*, 1986) or, more precisely, active *framing* processes, allows for an effective mobilization of participants and resources (e.g., funding, political support). If orientations of potential participants resonate with a provided frame, they are more likely to contribute (Snow *et al.*, 1986).

For a short illustration of how market organizers of the sharing economy created their market orders through theorization and framing, we draw on transcripts of two National Public Radio interviews from the radio show ‘How I built it’ (NPR, 2016; NPR, 2017). Both interviews provide official self-descriptions of the co-founders of Lyft and Airbnb as they narrate for a national radio audience, the processes and obstacles of setting up their marketplaces for a national radio audience.

Lyft, which originated in San Francisco, USA, operates a ride-sharing service in some 300 US and Canadian cities. Amateur drivers who are screened by Lyft register themselves on the platform and offer rides via the Lyft app using their private car, and riders request rides using the app. Lyft regulates prices, and riders rank drivers on a scale of 1 to 5 through the Lyft app. The company began as an online service for ride sharing to and from US universities and shifted in the middle of 2012 to a general Internet platform for private taxi services (NPR, 2017), turning a digital infrastructure for ride sharing at universities into a general service for individual transport. According to the co-founder, John Zimmer, this expansion of services was driven by Lyft’s vision to create a ‘better use for underused cars’ (NPR, 2017: 16-minute point in the interview). To accomplish this vision, the company needed to combine two resources: a personal car and a car owner willing to drive other people around. In the interview, Zimmer describes the difficulties the company faced in establishing the digital

marketplace and presents several cornerstones of his model, which conflicted with taken-for-granted beliefs of potential sellers (drivers) and buyers (riders). He explains that taxicabs are considered to be 'safe' to ride in. People do not want to ride in 'someone else's vehicle', and few people are willing to drive a taxi. When the general notion of car-based transport is shifted to 'share a ride', however, many more people would be willing to participate as drivers and customers rather than driving for or riding in a regular taxi. The co-founder elaborates more extensively:

... But also you have to remember what is now accepted as normal. Getting into someone else's vehicle was not at all normal at the time [mid-2012]. In fact, we had to work to change people's behaviour. And in the early days, we suggested sitting up front. And ... creating this ... 'your-friend-with-a-car hospitality' environment. (...) And if you go in a room with a hundred of our friends and you ask: 'How many of you are willing to drive a taxi?' A couple of hands maybe go up. When you say: 'How many of you are willing to share a ride?' Ah you know – 75 hands would go up. And so... We wanted to create the experience around that... (our simplified transcription from NPR, 2017: 16.46-minute point in the interview)

So, the co-founder described that in order to enable the Lyft market model, they needed to alter the framing of the paid service to foster a new practice that breaks away from taken-for-granted beliefs and routine behaviour. They reframed the service with a community notion: 'your-friend-with-a-car hospitality environment'. This community-based reframing is also illustrated by his example that, initially, riders were asked to sit up front and not in the back. In order to facilitate trust between drivers and riders, Lyft encouraged drivers to link their Lyft profiles with their Facebook profiles. The example describes an approach to denote the everyday-life practical difference between a regular taxi ride and the novel Lyft service. Conversely, applying a community framing to the service also increased the drivers'

willingness to provide shared rides. After developing the model further, Lyft eventually secured venture capital funding and expanded the service.

Airbnb, which also originated in San Francisco, now operates internationally, providing a digital market infrastructure for short-term lodging in private properties (Constantiou, Eaton & Tuunainen, 2016; NPR, 2016). Similar to the Lyft platform, individuals offer their private resources for rent on the Airbnb Internet platform – a bedroom, a flat, a condominium, or a house – and potential guests search for and book suitable accommodation. Safety and service quality is assured through verified personal profiles accompanied by an extensive user-review system. In our interview, the co-founder of Airbnb, Joe Gebbia, describes how the service evolved. After several unsuccessful attempts to launch the website, the founders serendipitously discovered a viable business model: making Airbnb a digital marketplace by collecting transaction fees. Gebbia elaborates extensively on how Airbnb evolved through a trial-and-error process that involved many setbacks. Early in the process, the founders faced adverse conditions because their idea of renting out private homes to strangers on a commercial basis was an uncommon notion that potential investors rejected out of hand.

Gebbia indicates that the Airbnb model disrupted taken-for-granted beliefs in such a substantial way that it was difficult to mobilize venture capital from investors: ‘...they look you square in the eyes and go: “This is weird. I am not investing in this.”’ (NPR, 2016: 16:33-minute point in the interview). Eventually, and again serendipitously, Airbnb secured funding from an investor to develop the Airbnb platform further. Building on this initial funding, the founders tried to overcome the remaining obstacles that were preventing the platform from working properly. Gebbia describes the key problem of enabling amateurs to become good competitive actors in the marketplace:

... As we start going through the search results and looking at the hosts, we identified a pattern. And the pattern was this: People just generally didn’t know how to take a good

photo of their home. So the photos were really bad. [...] Well people were just using their camera phones. At the time it was like flip camera phones, which is even worse. They were taking pictures at night. It just wasn't [good]... They weren't merchandizing their home in a way that you'd wanna stay there. So therefore no one was booking them. (our simplified transcription from NPR, 2016: 29:56-minute point in the interview)

Poor presentation impeded a smooth marketization of sellers' homes as offerings on the digital marketplace. The solution was to go directly to some of the early sellers and take professional photos of their accommodations with greater attention to lighting, composition, and staging. These changes facilitated bookings. Eventually, international guests – especially guests traveling back to their home countries from the USA – diffused the Airbnb model globally and soon requested that the service to be implemented in their city. Following this salient user-mobilization success, more investors entered the company and provided additional venture capital.

As the interview quotes illustrate, the sharing economy represents a specific case of the way a new market order is actively created by market organizers. In both sharing-economy cases, market organizers needed two vital ingredients: capital and framing. They first secured venture capital to develop and expand their models. This step was more pronounced in the Airbnb case, in which elaborate and tailored *theorizations* of different models were necessary to pitch the concept to and convince investors. The mobilization of amateur sellers was achieved next, by *framing* the sharing-economy marketplace through the use of non-market notions of 'sharing' and 'community'. This notion was more pronounced in the Lyft interview. The Airbnb case also demonstrated the market organizers' efforts to position the amateurs as proper competitive actors, advising them on how to commodify their private resources in the best way (e.g., improved pictures for the offers). The need to rally

participation and support from participants and investors explains the contradictory framing strategy combining market-orientated theorizations primarily for investors and the non-market, sharing-oriented ideas for potential participants.

In this sense, the sharing economy with its non-market connotations indicating that equal users would perform transactions in a peer-to-peer fashion effectively conceals the central role of market organizers as profiteers at the core of the phenomenon. Whereas sharing-economy marketplaces tend to present themselves as part of a quasi-social movement, respective theorization and framing presents only an initial step in creating a new stable market order. Thus the structural basis of sharing-economy marketplaces differs strongly from the notions that are evoked by the appealing term 'sharing'. To run smoothly, these new marketplaces require careful and continuous organization in a way that firmly establishes Internet platforms as powerful intermediaries in their marketplaces. In the next section, we elaborate on the ways in which the two companies establish this market order.

2. Organizational Elements and the Market Order on Digital Marketplaces

Providing a general perspective on the interrelation of socio-technical shifts and emerging digital marketplaces, Kirchner and Beyer (2016) argue that digital technology reshapes established transactions through three basic mechanisms: delocalization, delegation, and digital market organization. (1) *Delocalization* loosens strong ties to a particular physical place of objects or activities. For example, mp3-files can be more easily transferred than a regular audio CD can, and mobile digital technologies enable workers to perform their work outside their designated workplaces. (2) *Delegation* allows the reassignment of work tasks from regular employees to external actors. This development ranges from early examples of IT outsourcing to more recent phenomena, such as paid crowd sources and unpaid Internet

users that perform essential tasks in novel value-creation processes (Kleemann, Voß & Rieder, 2008; Bauer & Gegenhuber, 2015). (3) *Digital market organization* represents a market-bound form of intermediation on the Internet. Here, market organizers combine opportunities of delocalization (e.g., using a worldwide mobile IT infrastructure) and delegation (e.g., using contributions to user-evaluation systems) to establish a socio-technical infrastructure for digital marketplaces. In this sense, digitalization systematically enables and fosters the rise of market organizers as specialized intermediaries on digital marketplaces.

A market organizer is not exceptional, of course. Historically, many marketplaces were organized to allow for a safe exchange of goods (Aspers & Darr, 2017), the most salient example being stock exchanges, which are formal organizations, yet serve as prime examples of markets in general (Ahrne *et al.*, 2015; Langley & Leyshon, 2016). Considering markets from a field perspective, Fligstein and McAdam (2012.; Dombrowski, 2016) similarly argue that formal organizations often provide substantial contributions in many markets. As internal governance units, market organizers perform several functions to uphold established market orders – in the form of standardization organizations or trade associations that regulate the properties of goods and services facilitating market processes, for example. In fact, Ahrne *et al.* (2015) note that scholars often incorrectly conceive of ‘organization’ and ‘market’ as mutually exclusive. They argue that organization and market usually mesh, as market transactions require certain organizational elements.

Thus, digital marketplaces of the sharing economy represent a specific form of the organization of markets, because a market organizer (a formal organization) digitally mediates market transactions between sellers and buyers on an Internet platform. To date, however, it remains largely unclear what specific elements market organizers install to operate market orders on digital marketplaces. Ahrne *et al.* (2015) proposed an analysis of the organization of markets along five key organizational elements that represent elements of a

decided order: membership, rules, monitoring, sanctions, and hierarchy. (See Ahrne & Brunsson, 2011; Ahrne *et al.*, 2015; Ahrne, Brunsson & Seidl, 2016; also Rasche, de Bakker & Moon, 2013; and a critical response by Apelt, Besio, Corsi *et al.*, 2017.) According to Ahrne and Brunsson (2011), these five elements represent core features of regular formal organization, which they call ‘complete organization’. They also argue, however, that these elements can be found outside formal organizations, including in markets, where the elements define buyers and sellers and their interrelations, rights, and responsibilities. Thus, sharing economy platforms can be investigated according to their specific configuration of organizational elements that underlie the particular organization of its digital marketplaces.

In the following subsections, we use the five elements of organization outlined by Ahrne *et al.* (2015) as a general taxonomy to flesh out the common properties of the market orders in the two sharing-economy marketplaces – Lyft and Airbnb – based on website information, existing studies, and company reports.

2.1 Membership – Account Membership

Market organizers require sellers and buyers to create an account to interact on the digital marketplace (van Dijck, 2009). Creating an account requires sellers and buyers to agree to the general rules of the marketplace and to reveal their identities by providing such information as full name, residential address, e-mail address, social media account information, payment information, and telephone number. Airbnb, for example, verifies identities by telephone numbers, and profile photos, and sometimes requires additionally verification by photo ID. The implications of accounts differ for buyers and sellers: Whereas seller profiles routinely identify buyers, their registration often resembles the rules and procedures of consumer websites, such as those in regular retail Internet businesses (See chapter by Grothe-Hammer in this book.) In contrast, a seller account often entails more extensive rules and

responsibilities regarding, for instance, detailed rules on providing a service, the extend of shared and verified personal information or descriptions of offers. Thus, at least a seller setting up an account constitutes a form of membership that could be called ‘account membership’. Account membership serves as a necessary precondition for displaying information, offering goods and services, placing orders, and eventually performing market transactions.

Account membership constitutes a limited and vague form of membership as compared to membership in a regular, formal organization (Luhmann, 2000) – as an employee in a company, for example. A marketplace does not use membership to command members to perform particular actions. It merely grants access to a general frame that enables market-related activities. With these properties, account membership is similar to club membership (Ahrne & Brunsson, 2011) or membership in a voluntary association (Lütz, 2006): Users can perform certain activities that comply with general rules, yet are typically not contractually obliged to routinely perform specific actions, as employees of a company would be.

The boundaries of membership status represent a key issue for sharing economy platforms. It is noteworthy that some market organizers of the sharing economy go to great lengths to ensure that sellers have no formal employment relationship with market organizers. Uber provides prominent examples for this argument, with its currently pending court cases regarding requests that drivers be treated as employees and be granted such rights as minimum wage and holiday pay (Davies, 2017) and the questioning of its regulatory status as an mediator rather than a transport service (Bowcott, 2017).

2.2 Rules – Algorithmic Bureaucracy

Market organizers decide on rules that users must comply with (Evans, 2012) – rules defining the type of goods or services that can be offered and the general conditions and processes for

user-generated information and market transactions. Marketplaces implement rules on processes by their technical infrastructure operating through algorithms. (See Orlikowski & Scott, 2015; see generally Mittelstadt, Allo, Taddeo *et al.*, 2016.) Algorithms generate a user interface of apps or websites, allowing users to act according to predefined processes and preselected information and to choose from the options presented.

Digital marketplaces enforce a regime of rules (Butler, Joyce & Pike, 2008). Developing the idea of algorithmic governance (Müller-Birn, Dobusch & Herbsleb, 2013), this regime could be termed *algorithmic bureaucracy*. Comparable to traditional bureaucracies, activities in digital marketplaces resemble predefined ‘performance programs’ (March & Simon, 1958) or ‘conditional programs’ (see Luhmann, 2000) performing simple bureaucratic if-A-then-do-B rules. Thus, similar to regular formal organizations (Mintzberg, 1979), marketplaces standardize processes by bureaucratic routines to cope effectively with the vast uncertainty and the manifold options of possible user activities. Performance programmes ensure the predictable and routine processing of information and transactions on the digital marketplace.

In clear contrast to formal organizations, digital marketplaces implement these processes through websites or app interfaces. On digital marketplaces, algorithmic interfaces appear as impersonal entities, whereas employees in regular organizations would traditionally perform bureaucratic programmes. Users on digital marketplaces cannot act in a way that is not already included in these technical interfaces.

2.3 Monitoring – User Evaluations and Process Data Recording

Market organizers monitor user behaviour through their technical infrastructure to ensure compliance with rules. The technological infrastructure allows for a comprehensive recording, storage, and analysis of the user data generated (van Dijck, 2009: 47). Often referred to as ‘big data’ (Lazer & Radford, 2017), these data masses create an extensive reservoir for quasi-

panoptic observations (see Foucault, 1977) of users by the market organizers. Additionally, online evaluation systems gather comprehensive data about users' activities. (See Orlikowski & Scott, 2014; Orlikowski & Scott, 2015; Diekmann & Przepiorka, 2017.) Users generate these data as they rank, rate, describe, or comment on offers, users, and transactions. At Lyft, both drivers and passengers can be ranked on a 5-point scale, and anything below 4.8 is defined by the platform as problematic. The platform also asks for written feedback and sends drivers a weekly passenger feedback summary, flagging potentially problematic issues. Airbnb uses a longer questionnaire for guests and hosts, embracing such dimensions as communication, location, and cleanliness of the property, which are also ranked on a 5-point scale. Guests and hosts also can provide additional written evaluative statements. Airbnb, like Lyft, mediates in case of problems and provides advice for such issues as giving and dealing with negative evaluations.

User evaluation systems facilitate several mechanisms that digital marketplaces require to operate:

(1) Comprehensive evaluation systems create a basic *comparability of offers* (Beckert, 2009; Kirchner & Beyer, 2016; Aspers & Darr, 2017). Offers can be ordered and related to individual preferences, and rankings, ratings, descriptions, and comments become 'judgment devices' (Karpik, 2010).

(2) Evaluation systems also *facilitate trust* between sellers and buyers – a necessary basis of any working market order (Beckert, 2009; Kirchner & Beyer, 2016; Aspers & Darr, 2017; Kornberger, Pflueger & Mouritsen, 2017). Reputation and the number of completed transactions allow for a more reliable assessment of users' trustworthiness (Diekmann & Przepiorka, 2017). To some extent, evaluation systems substitute for prices as the main market signal, rendering them a key mechanism for structuring market transactions on digital marketplaces (Aspers & Darr, 2017), and *terms of trade become terms of evaluation*. This

means that evaluations by ratings and rankings provide the basis for successful market exchanges on the marketplaces. Good ratings enable sellers and buyers to participate, whereas bad ratings lower the chances of selling or buying. Evaluations, especially for Airbnb, substantially determine the prices that sellers can charge, because good ratings signal trustworthiness and service quality.

(3) The evaluation system congenially *complements algorithmic bureaucracy*. Whereas the technical infrastructure enforces the rules of algorithmic bureaucracy on the Internet platform, user-evaluation systems cover activities or information that are not processed directly via app or website interfaces. This includes the actual performing of the service, the delivery of the goods, and the experienced quality and accuracy of descriptions. Combining user data and evaluation results allows market organizers to monitor user activities comprehensively, efficiently, and effectively.

2.4 Sanctions – Exclusion and Rating Impact on Transactions Terms

Market organizers can sanction users to enforce marketplace rules through such effective forms of sanctioning as market exclusion. Revoking account membership disables users to perform transactions or take part in other marketplace activities. (See Evans, 2012.) The mere threat of exclusion enforces marketplace rules, which, in some respects, is similar to exclusion and rule enforcement in formal organizations (Luhmann, 2000). A violation of a single rule allows for exclusion – the loss of account membership status. The technical infrastructure limits the need to sanction members negatively, because options are either technically presented or simply not provided. Deviant behaviour in the marketplace is therefore substantially contained. Additionally, user evaluation systems decrease the need for direct sanctioning by the market organizer because bad user ratings result in decreased transaction chances and lower obtained prices. Conversely, good user ratings increase transaction

opportunities and raise obtained prices. In combination, these mechanisms enable an effective sanctioning of user behaviour.

2.5 Hierarchy – Asymmetrically Decided Order

The market organizer – being a formal organization itself – assumes a strong hierarchical role in the digital marketplace. In this technically enabled power position (see Dolata, 2017), market organizers decide asymmetrically on the organization of the digital marketplace, designing and adapting membership, rules, monitoring, and sanctions. There is usually no routine mechanism of voice, vote, or other forms of direct participation of users in a marketplace.

This obviously strong position of asymmetrical power by market organizers must not be confused with universal power – a critical distinction because other perspectives may result in accounts that view the unquestionably powerful technology as overly deterministic. Similar to traditional organizations, in which actual work practices often undermine attempts to standardize workflows and control member activities through technology (Orlikowski & Robey, 1991), users of platforms can evade some of the formal rules and monitoring efforts. (See Orlikowski, 2000; Orlikowski & Scott, 2014.) Airbnb, for example, requires full names and suggests that sellers and buyers upload a personal account photo to provide a sense of security and relatability. Users actually employ this information to discriminate, however – on the basis of race, for example (Edelman & Luca, 2014). Additionally, some marketplace users take advantage of the platform’s search and communication infrastructure to find accommodations, but then exchange private contact details with the seller in order to save the transaction fee by undertaking transactions outside the platform (Aspers & Darr, 2017). In such cases, users employ mechanisms programmed to facilitate market order for unintended purposes. Market organizers must therefore engage in a general process of constant adaptation

to integrate other user activities (Dolata, 2015; Grenz & Eisewicht, 2015), prevent undesired activities (e.g., deviance, fraud, disorder), and incorporate desired ones (e.g., new process accommodating specific user demands or preferences). Other deviant activities, such as the fake reviews that plague other platforms, including Amazon, TripAdvisor, and Yelp (Orlikowski & Scott, 2014; Luca & Zervas, 2015), seem to be less often associated with Lyft or Airbnb, because the technical infrastructure of the platform ties the reviews directly to transactions .

Additionally, although individual sellers and buyers have practically no direct say in the organization of the marketplace, one could assume that users could collectively pressure the market organizer – in the form of a collective outcry, collective behaviour shifts, or collective reinterpretation of rules, for instance. To date, however, protests come mainly from established competitors, as evidenced by the recent anti-Uber protests by taxi drivers around the world (Schmidt, 2016).

2.6 A Digital Market Order Comprising Five Organizational Elements

Summarizing our argument, the hierarchical position enables market organizers to enforce binding decisions about general user activities through membership, rules, monitoring, and sanctions. Table 1 briefly summarizes the five elements and the associated general characteristics of the digital marketplaces.

Table 1: Five Elements of Organization and Digital Marketplaces

Element	Description according to Ahrne & Brunsson, 2011	Characteristic of the digital marketplaces
(1) Membership	Decide who joins as member	Account membership

(2) Rules	Require members to comply	Algorithmic bureaucracy
(3) Monitoring	Surveil members' compliance with commands and rules	User evaluations and process data recording
(4) Sanctions	Impose positive or negative sanctions on members	Exclusion and rating impact on transactions terms
(5) Hierarchy	Exercise a right to make binding decisions	Asymmetrically decided order

The combination and interrelation of the five elements enable the organization of a sufficiently stable market order for the users. The rules of the algorithmic bureaucracy predetermine processes on the digital marketplaces and inhibit unwanted activities. These technically implemented rules are complemented by user evaluations that cover aspects of the digital marketplace that cannot be transformed into algorithmic processes. Thus, algorithmic bureaucracy and evaluation systems provide two core mechanisms for market organizers to establish and maintain a new kind of market order on digital marketplaces.

We would like to highlight two important points here:

(1) Market organizers implement powerful and effective rules on the digital marketplace based on their materiality (Orlikowski, 2000; Orlikowski & Scott, 2015): Digital marketplaces build on an extensive sociotechnical infrastructure that is necessary to process communication and market transactions on an Internet platform. This sociotechnical infrastructure format processes by inscribing rules into the technology, so that only rule-conforming processes allow for successful user activities on the Internet platform (e.g., market transactions or information sharing). Here, algorithms or 'code, in the form of an operating system, becomes the medium for connecting disparate actors' (Langley & Leyshon,

2016: 5; see Evans, 2011). In this sense, algorithmic code restricts user behaviour and fulfils a law-like function at the expense of other options (Kenney & Zysman, 2016; Orlikowski & Scott, 2015). The rules of the decided order need to be enacted in practice, however. Although market organizers implement formal rules in the platform infrastructure in order to facilitate market transactions, some users employ the same infrastructure to discriminate against other users or to communicate with each other privately, thereby evading marketplace fees. Only in practice does the powerful materiality of marketplace rules meet the opportunities of users to reinterpret and potentially circumvent the decided order implemented in the code (Grenz & Eisewicht, 2015; Aspers & Darr, 2017).

(2) A digital marketplace represents a specific configuration of the five organizational elements that enable a formal organization – the market organizer – to operate a digital marketplace. Digital markets are highly organized, because all five organizational elements are applied. They are not applied in a way that would resemble a full-fledged formal organization with employees, however. Conveniently, the evasion of such a standard formal organization significantly reduces responsibilities (e.g., employee rights, compensation, voice mechanisms, and regulatory responsibilities) that would require substantial resources and co-ordination efforts from market organizers. At the same time, algorithmic bureaucracy and evaluation systems implemented through the technological infrastructure substitute for more hierarchical and binding structures possible only in full-fledged formal organizations. By employing this specific configuration of organizational elements, digital market organizers are able to scale up and adapt their platform business models. In fact, this effective limbo between partial and complete organization may constitute the very basis for successful market organizers to achieve a quick-growth, low-fixed-cost, high-flexibility business operation with just enough control to extract transaction fees. This may also be the secret of the rapid growth

and international success of the sharing economy platforms, pioneered and exemplified by Lyft and Airbnb.

The sharing economy platforms take a generally diffused pattern in the platform economy to a further level, because sharing-economy market organizers deploy a general template of digital market orders (Kirchner & Beyer, 2016) to commodify private resources and harness labour power from amateurs. The sharing-economy platform effectively advances marketization into social arenas that previously were not generally under the pressures of market mechanisms. Thus market organizers in the sharing economy, like Lyft and Airbnb, do not merely mediate communications between buyers and sellers. By installing the five elements of organization, the market organizers decide on specific rules, and subsequently monitor and sanction these rules. Through these technologically enabled mechanisms, market organizers of the sharing economy govern how the services are offered, categorized, performed, evaluated, and paid for.

3. Towards an Iron Cage of Algorithmic Bureaucracy?

In the so-called 'sharing economy', market organizers serve as transformative agents installing new market orders with a digital format. In the created market order on digital marketplaces, market organizers constitute an essential fourth actor, providing an infrastructure to intermediate between sellers and buyers for their own interest. Theoretical positions that consider only sellers and buyers would fail to capture this crucial structural difference. By installing organizational elements, market organizers of the sharing economy effectively transform 'peers', 'communities' and 'crowds' into organized participants on a digital marketplace. Furthermore, if the spread of digital technology systematically facilitates the intermediary position of market organizers (see Kirchner & Beyer, 2016), the rise of the

platform economy should systematically foster a further rise of market organizers. Thus, instead of viewing digitalization as a mere technological or innovative process, we need to engage more with the *organizers of digitalization* and the emerging *organization of a digital society*. This need for engagement underlines the possible contribution of the five organizational elements for research on digital marketplaces in particular, and for research on the transformative power of the Internet and digital technology for society in general.

Our investigation yields general insights for the perspective of the organization of markets. Digital marketplaces clearly represent a current and perhaps central case for the organization-of-markets perspective. The diffusion of digital marketplaces in many social arenas poses critical questions that call for future investigation: Are we perhaps facing an iron cage of algorithmic bureaucracy, as more and more markets assume a digital format? How does the omnipresence of panoptic evaluation systems on digital marketplaces shape interactions between sellers and buyers? How do digital marketplaces change social arenas that face intensified pressures of marketization? These questions clearly deserve further consideration and empirical analyses in organization studies and beyond.

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