

COMMUNITY-BUILDING STRATEGIES IN PEER-TO-PEER MARKETPLACES

****Working Paper****

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Abstract

A growing number of entrepreneurial firms establish technology-enabled peer-to-peer marketplaces for asset rental or service provision. These types of marketplaces have been thought to contribute to the rise of a ‘sharing’ economy in which individuals transact with one another, and consume products without owning them, or access services carried out by other individuals. Despite its prevalence, this phenomenon is poorly understood. Existing research on related phenomena, namely multi-sided platforms and user communities, has adopted either a transaction-based or knowledge-based view of the focal firm’s interest in orchestrating and leveraging access to interactions among individuals for value capture. However, less is known about the value creation process and specifically, the strategies that promote social exchanges among transacting individuals and other non-pecuniary incentives and rewards. Through multiple case studies, this dissertation seeks to build new theory about the value creation process in peer-to-peer marketplaces and the strategies that enable the focal firm to orchestrate and influence participants’ interactions so the outcomes of their interactions enable value to be created and captured.

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Introduction

A growing number of entrepreneurial firms establish technology-enabled peer-to-peer marketplaces for asset rental or service provision (henceforth simply peer-to-peer marketplaces). Peer-to-peer marketplaces have been thought to contribute to the rise of a ‘sharing’ economy that promotes new types of consumption and work arrangements, and alters incentives for asset ownership (Botsman and Rogers, 2010; Fraiberger & Sundararajan, 2015; Gansky, 2010; Sundararajan, 2013; The Economist, 2013). Airbnb, Uber, Lyft, Taskrabbit, Dogvacay, and Roadie are only a few examples of entrepreneurial firms that have launched these types of marketplaces, which create and capture value by enabling interactions among individuals or independent professionals, e.g. Airbnb facilitates interactions, including transactions between hosts and guests while Dogvacay facilitates interactions between pet owners and pet sitters.

It has been suggested that peer-to-peer marketplaces operate differently from earlier versions of online marketplaces such as eBay and Amazon because the transactions enabled through peer-to-peer marketplaces are short-term and recurring, and do not involve transfer of ownership rights (Fraiberger & Sundararajan, 2015). Moreover, peer-to-peer marketplaces are different from traditional service provision because exchanges occur between individuals (Fraiberger & Sundararajan, 2015). They are also different from other firms that exhibit network effects such as Craigslist, which provides a directory that individuals browse to find products or services that match their needs. In contrast, peer-to-peer marketplaces take a more active role in facilitating the matching process, and transactions between ‘sellers’ and ‘buyers’ or two sides of the market (Sundararajan, 2014). Lastly, unlike other marketplaces, interactions through these

new types of peer-to-peer marketplaces are completed when both an economic and a social exchange occurs, either virtually and/or in person.

Despite their prevalence, peer-to-peer marketplaces are an under-researched phenomenon, which merits closer examination because it has important implications for both theory and practice. From a practical perspective, peer-to-peer marketplaces are important to study because they are inventing new ways to compete in established industries such as transportation and travel accommodation, by delegating service delivery, customer service and other key aspects of a firm's offering to individuals without employing them (Sundararajan, 2013; *The Economist*, 2013). Scholars have also found some preliminary evidence that peer-to-peer marketplaces alter consumers' incentives for asset ownership, promote new types of consumption, and increase the economic welfare of low-income consumers (Fraiberger & Sundararajan, 2015). Others have proposed that the unusually high valuations peer-to-peer marketplaces have received by investors reflect peer-to-peer marketplaces' higher levels of profitability and faster growth rates than those of S&P 500 companies (Libert, Wind & Fenley, 2014).

Lastly, peer-to-peer marketplaces merit further study because they are likely to have to develop unique competencies for orchestrating interactions and developing trusted relationships among their participants. Founders of peer-to-peer marketplaces often discuss such competencies in terms of building a 'community'. Dedicated teams of employees responsible for 'community development', and company websites and blogs dedicated to showcasing stories of community members, i.e. users provide evidence of 'community building' activities. On company websites, community is typically defined as the system of participants that are affiliated with the focal firm and interact through its technology. However, the founder of Lyft, the second largest peer-to-peer marketplace for car sharing in the U.S. explains that underneath the surface, community

building entails a great level of complexity that is not obvious to outsiders or marketplace participants.

“Some people may think it’s weird to build a community. The community should seem like it’s just a natural thing. Our feeling is that that it is the right thing to do to build the community, because if you don’t, your service can degrade into something like Chatroulette and so, by building the community you can create some community norms [...]. The metaphor we use is a swan, where it’s beautiful and elegant on the surface and there’s a lot going on underneath. This is also true with our community.” ~ Founder, Lyft (SXSW 2013 conference session)

Peer-to-peer marketplaces and the community building strategies that support their growth also present a context teeming with opportunities to develop new theory about how firms create and capture value in collaboration with communities of end consumers (Priem, 2007; Priem, Li & Carr, 2012). Firm collaborations with end consumers is thought to create opportunities for pursuing alternative paths to value creation that can then help create and sustain competitive advantage even in the absence of rare or valuable resources (Priem et al, 2012). One study has shown that firms create more value for consumers when they combine products and services that appeal to consumers’ preferences even when these combinations appear unrelated from the producer’s perspective, i.e. product combinations do not have overlapping resources (Ye et al, 2012). Firm-consumer collaborations are especially critical for value creation and value capture in the context of peer-to-peer marketplaces not only because the focal firm delegates activities that have traditionally resided within firm boundaries to individuals, but also because firm survival depends on individuals’ willingness to engage in these activities.

Lastly, peer-to-peer marketplaces are likely to have implications for theory because their role as orchestrators of both economic and social interactions among individuals may give rise to modern forms of community, which a focal firm coordinates but does not formally control (O’Mahony & Lakhani, 2011). O’Mahony and Lakhani (2011) have suggested that modern forms of communities serve new functions other than “protest, learning or sensemaking” and

may require the focal firm to develop novel capabilities for managing community activities, processes and outcomes (O'Mahony & Lakhani, 2011: 11). The possibility that peer-to-peer marketplaces design the creation and produce new types of communities raises important questions about how organizational processes and firm survival may be affected by these activities. A recent study, for example, has shown that marketplaces, which enable direct interactions between two or more groups of participants, make fundamentally different strategic decisions from resellers who simply buy and sell products (Hagiu & Wright, 2014a). Resellers, determine prices, fulfill orders and provide customer service whereas marketplaces allow participants to control the terms of their interactions (Hagiu & Wright, 2014a). Taken together, these arguments suggest that the study of peer-to-peer marketplaces can generate new knowledge not only about a prevalent and poorly understood phenomenon but also about how firms chart alternative paths to value creation and value capture with individual consumers, and ultimately compete in markets.

Research on Related Phenomena: Multi-Sided Platforms and User Communities

Existing research provides some but not adequate explanation of this prevalent phenomenon. Specifically, I draw from research on multi-sided that examines how the focal firm creates and enables a system of interactions, and from research on user communities that studies how a focal firm collaborates with external collectives of individuals to understand how might exist research inform the study of peer-to-peer marketplaces. Although multi-sided platforms and user communities are distinct phenomena, organizational scholars have suggested that understanding drawing theoretical connections between the two literatures can facilitate the study of new phenomena and help develop a more solid theoretical foundation for each literature

(Thomas, Autio & Gann, 2014). Below, I discuss how each of these two literatures informs the study of peer-to-peer marketplaces and show that each one builds on certain assumptions that do not hold in the context of peer-to-peer marketplaces. Each literature raises important and under-researched questions suggesting the lack of theory and evidence on peer-to-peer marketplaces especially as it relates to their formation and growth.

Multi-sided platforms. Multi-sided platforms operate in two-sided (or multi-sided)¹ markets with network externalities (Katz & Shapiro, 1985; Rochet & Tirole, 2003b). The key characteristic of two-sided markets is “the presence of two distinct sides whose ultimate benefit stems from interacting through a common platform” (Rochet & Tirole, 2003b: 990). As such, multi-sided platforms seek to “enable interactions between end-users, and try to get the two (or multiple) sides on board by appropriately charging each side” (Rochet & Tirole, 2006: 645). The presence of two distinct but interdependent groups of participants implies the presence of indirect network externalities that are thought to distinguish multi-sided markets from markets that exhibit only direct network externalities (Evans, 2003; Hagiu & Jullien, 2011; Hagiu & Wright, 2014b).

Indirect, or cross-group network externalities exist when demand for a product or service depends not only on the number of other consumers but also on the number of producers in the network (Gupta, Jain & Sawhney, 1999). As an example, the telephone is a one-sided platform that operates in a market with direct network externalities; its value increases as the number of telephone users increase. In contrast, gamers using Xbox, a video game platform, derive more benefit when more game developers create Xbox-compatible video games. In turn, video game developers experience greater benefit as more gamers use the Xbox platform. In other words,

¹ I use the terms ‘two-sided platforms’ and ‘multi-sided platforms’ interchangeably similarly to most platform research.

indirect network externalities exist in both directions and create a unique strategic challenge for multi-sided platforms—a large enough number of users from both sides of the market must already be enrolled for the platform to be able to create value for either side (Hagiu & Jullien, 2011; Hagiu & Wright, 2014b). This challenge creates “the celebrated chicken-and-egg problem” of recruiting users before network externalities are generated (Rochet & Tirole, 2003b: 990).

The same chicken and egg problem exists in peer-to-peer marketplaces, which seek to attract two types of participants such as drivers and passengers who share car rides. However, in the formation stages of a peer-to-peer marketplace, participants are exclusively individuals. In contrast, participants in multi-sided platforms are both firms and end consumers (or independent professionals); this is either explicitly acknowledged (e.g. Hagiu & Wright, 2014a), or implicitly emerges from the empirical contexts where platform studies are typically carried out such as credit card businesses (Evans, 2003; Rochet & Tirole, 2003a; Rysman, 2007); and video game platforms (e.g. Boudreau & Jeppesen, 2014; Hagiu & Lee, 2011). The presence of only individual participants in is not just an empirical distinction between peer-to-peer marketplaces and multi-sided platforms but also a theoretical distinction. Specifically, individuals introduce greater variance in consumer preferences on *both* sides of the market. Variance in consumer preferences, or more simply demand heterogeneity, poses a strategic challenge for any firm seeking to achieve demand economies of scale (Gupta et al, 1999) as in the case of firms seeking to diffuse technological standards (Farrell & Saloner. 1985; Simcoe, 2012). This challenge is especially for peer-to-peer marketplaces whose growth depends on their ability to recruit a large number of individual participants with varying preferences and behaviors as well as coordinate interactions amongst them.

Research on multi-sided platforms is also useful in understanding the specific mechanisms through which peer-to-peer marketplaces create and capture value. Multi-sided platforms create value by designing technologies that allow platform participants to interact more efficiently thereby decreasing participants' search and transaction costs (Armstrong 2006, Caillaud and Jullien 2003, Evans, 2003; Parker and Van Alstyne, 2005; Rochet and Tirole 2003b; 2006). However, value creation in the multi-sided platform literature has not been discussed in any greater detail leaving out any other processes that may increase participants' willingness to participate. Recently, Hagiu and Jullien (2011) have challenged the widely held assumption that multi-sided platforms decrease search and transaction costs and have argued that certain platforms purposefully increase search costs by diverting users towards higher profit options (sellers, or stores) instead of making the most efficient match between buyers and sellers. Their argument raises the question of what other mechanisms might allow multi-sided platforms and peer-to-peer marketplaces alike to create value and attract participants especially in their formation stage when network effects do not yet exist. Little research exists on these important formation stages whose study may also generate new insights about value creation mechanisms likely to be critical for survival.

In contrast, platform scholars have generated ample evidence about how multi-sided platforms capture value under different levels of competitions and in various markets. The general idea is that multi-sided platforms can capture value once they resolve the chicken-and-egg problem of participant recruitment (Rochet & Tirole, 2003b; 2006). Its resolution is achieved through pricing strategies, which allow the multi-sided platform to set different prices for each side (thereby matching the different benefit that each side experiences from using the platform)

and capture value simultaneously from both sides (Evans, 2003; Eisenmann, Parker & van Alstyne, 2006; Hagiu, 2009; Rysman, 2007; 2009; Sun & Tse, 2007).

While price structures provide a parsimonious and efficient theory of how multi-sided platforms resolve the chicken and egg problem, they assume participants are extrinsically motivated, and only incentivized through financial incentives and rewards. Moreover, price strategies do not explain how multi-sided platforms attract participants in the early stages when they are less likely to charge their first users. Relatedly, pricing strategies overlook the impact of social interactions on the likelihood of transactions taking place. Roadie, for example, a peer-to-peer shipping platform, enables individual shippers and individual drivers to exchange considerable levels of information before a transaction takes place as well during the course of package delivery. Similarly, a car ride-sharing marketplace such as Uber requires that a social interaction take place between the driver and the passenger during service delivery, i.e. during the car ride. These social interactions, whether online or in person, are likely to impact users' satisfaction, the likelihood of their future participation, as well as the likelihood of a transaction occurring in the first place. As a result, peer-to-peer marketplaces enable both social and economic exchanges between transacting parties. Even though the non-pecuniary exchanges have been largely overlooked in the multi-sided platform literature, they are particularly relevant for the survival and growth of peer-to-peer marketplaces. These oversights lead to the first set of questions motivating this study: *How do peer-to-peer marketplaces create value for their participants above and beyond efficient search and low transactions costs? How might their need to enable social interactions require the formulation of alternative strategies and processes that support the growth of the marketplace?*

Additional insights on the strategies that firms pursue to promote non-economic interactions and benefit from them stem from research studying firm collaborations with user communities. This research also points to key strategic challenges facing firms when trying to engage with, and sustain the participation of, users. However, its focus on expert participants, innovation processes and self-managed user communities, as opposed to firm sponsored user communities only partially informs the phenomenon of peer-to-peer marketplaces.

User communities and user innovation. Research on user communities and user innovation grew out of the idea that the advent of the internet would allow firms to collaborate more closely and more frequently with stakeholders to find novel resources which firms can then integrate with internal processes and improve performance (Chesbrough, 2003; von Hippel, 1986; von Hippel & von Krogh, 2003). User communities are one type of external stakeholder comprised of individuals who voluntarily come together, virtually or in person, to exchange information, and to develop both knowledge and solutions for their own personal or professional interests (Franke and Shah, 2003; Shah, 2006; Shah & Tripsas, 2007). Firms seek to collaborate with user communities for the development of software products (e.g. Haefliger, von Krogh & Spaeth, 2008; Hienert, von Hippel & Jensen, 2014; O'Mahony, 2007; West, 2003) or consumer products (e.g. Baldwin, Hienert & von Hippel, 2006; Demil, & Lecocq, 2006; Franke, von Hippel & Schreier, 2006; Hienert, 2006).

User communities are typically self-managed and thus outside the direct or formal control of any particular firm (Felin & Zenger, 2014). As a result, a focal firm looking to capture value from a user community's ideas or solutions must find ways to influence the community's activities, i.e. the problems community members choose to solve, so that community outcomes are useful and relevant to the firm (Dahlander & Piezunka, 2014). Also known as the tension

between ‘openness and control’, this strategic challenge has fueled scholars’ interest in understanding how firms can capture the most value from the voluntary contributions of user communities thereby improving innovation performance (Bogers, 2011; Laursen & Salter, 2014; von Hippel & von Krogh, 2003; West, 2003).

Creating firm sponsored communities, when “one (or more) corporate entities control the community’s short or long term activities” (West & O’Mahony, 2008: 5), are seen as one type of solution to tension between openness and control. By sponsoring their own user communities, recommending problems for the community to solve, and compensating community participants with social recognition, and prizes (Baldwin, Hienerth & von Hippel, 2006; Chatterji & Fabrizio, 2012; 2014; West & O’Mahony, 2008), sponsoring firms can exercise more control over community activities and outcomes.

Firm sponsored communities are related to peer-to-peer marketplaces in that the focal firm assumes the role of coordinating interactions among individual participants. However, there are only a handful of studies on firm sponsored user communities and those that do exist maintain the same focus as the rest of the user community literature, namely on capturing to improve innovation performance (Dahlander & Gann, 2010; Felin & Zenger, 2014). As such, this small number of studies does not consider the impact that users may have not only for innovation but also for the entire value chain (Levitas, 2013). The impact of user contributions beyond innovation is evident in a recent study, which has shown that newspapers fail to capture value from user generated content includes in their online editions because users’ increased discretion over published content “causes the newspapers to lose control over the attributes of their product lines, thus limiting their ability to extract rents from consumers” (Yildirim, Gal-Or & Geylani, 2013: 2665). Yildirim et al’s (2013) findings highlight once again the key strategic

challenge that firms must address when they collaborate with communities of external stakeholders, namely how to elicit their participation in ways that benefit the firm.

Although user innovation research has generated a lot of evidence of both the benefits and costs that accrue to firms from collaborations with user communities, it has not systematically explored the process by which firm-community collaborations come about. It has also assumed taken for granted that value is created when firms integrate the community's input with the firm's resources and activities (West, Vanhaverbeke & Chesbrough, 2006). This integration is acknowledged to be both complex and poorly understood (Bogers, 2011). In fact, the emphasis of user innovation research is instead on the outcomes of the integration process (Dahlander & Gann, 2010).

More recently, open innovation scholars have hinted at the need to study the process through which firms try to sustain use communities' participation in initiatives of interest to the focal firm (Dahlander & Piezunka, 2014; Felin & Zenger, 2014). Specifically, Dahlander and Piezunka (2014) have suggested firms take a more active role in guiding participants' attention towards initiatives they want users to take on. Felin and Zenger's (2014) argument provide guidance as to how firms may proactively direct attention to users, i.e. through the use of different communication channels some of which may facilitate interactions either between the firm and the community while other may facilitate communication among community participants. These recent studies however have not yet generated a coherent conceptual or empirical foundation that may explicate the process through which firms influence community interactions, and even shape the perceptions or attention of external stakeholders. Studying these questions can also help generate new knowledge about how peer-to-peer marketplaces convince a large number of individuals not only to participate in the marketplace but also to interact in

ways that conform the focal firm's goals. Thus, my second set of research questions are '*how do peer-to-peer marketplaces manage community production? How might they control or influence, if at all, participants' interactions so that outcomes of their interactions are aligned with firm goals?*'

Theoretical Background

In this section, I discuss the dimensions of peer-to-peer marketplaces as they emerge from research on multi-sided platforms (multi-sided platform) and user communities. Lastly, I discuss how research on multi-sided platforms and user communities informs the study of peer-to-peer marketplaces but raises a number of research questions that are relevant both for peer-to-peer marketplaces as well as each of these two literatures.

Defining Peer-to-Peer Marketplaces

What is a peer-to-peer marketplace? How is it different from related constructs? Peer-to-peer marketplaces exhibit 4 key characteristics: a) participants in peer-to-peer marketplaces are individuals; b) their interactions do not involve the transfer of ownership rights; c) a focal firm coordinates interactions among participants; and d) interactions among participants entail transactions and some type of social interaction either before or during the consumption of the product or service that is being exchanged.

Peer-to-Peer Marketplaces and Multi-Sided Platforms

A peer-to-peer marketplace can be thought of as a particular type of multi-sided platform, Both peer-to-peer marketplaces and multi-sided platforms seek to enable and coordinate a system of interactions among two or more groups of participants and to capture value from these interactions (Armstrong 2006, Caillaud and Jullien 2003, Evans, 2003; Parker and Van Alstyne 2005, Rochet and Tirole 2003b; 2006). Peer-to-peer marketplaces however do not involve the

transfer of ownership rights through these interactions. For example, goods sold by Amazon sellers to Amazon buyers entail the transfer of ownership from the seller to the buyer. In contrast, a home rental accomplished through Airbnb's marketplace does not entail transfer of rights over home ownership from the buyer to the seller. Hagiu and Wright (2014a) identify lack ownership right transfer as a distinguishing characteristic of new forms of marketplaces in which participants can define and control the terms of their interaction including "noncontractible decisions (prices, advertising, customer service, responsibility for order fulfillment, etc) pertaining to the products being sold". (Hagiu and Wright, 2014a: 185).

Multi-sided platforms and peer-to-peer marketplaces also differ in terms of the types of participants. Participants in peer-to-peer marketplaces are individuals and/or independent professionals whereas in multi-sided platforms participants include both firms and end consumers (or independent professionals) (Hagiu & Wright, 2014a). 'Participant types' has been used in prior research to classify different multi-sided platforms into categories with different structural characteristics (Gawer, 2014). Specifically, Gawer (2014) has argued that employees or business-level departments participate in internal platforms; assemblers or suppliers participate in supply-chain platforms; and complementors participate in industry platforms (Gawer, 2014). Despite their proliferation, multi-sided platforms that enable interactions among individuals remain absent from the multi-sided platform literature. The roles of individuals and/or independent professionals in shaping strategy is important to consider in any networked business because large numbers of participating consumers introduce substantial variance in community members' preferences and behavior and challenge widespread adoption (Farrell & Saloner, 1985; Simcoe, 2012; Waguespack & Fleming, 2009).

Lastly, multi-sided platforms enable transactions (Rochet & Tirole, 2003b; 2006)

whereas peer-to-peer marketplaces enable both transactions and other types of interactions, such as social exchanges, through which information and knowledge useful in carrying out the transaction is transferred.

Peer-to-Peer Marketplaces and User Communities

User communities can be either self managed or firm sponsored. Self-managed user communities are coordinated by participants themselves, and thus rest outside the direct control of a particular firm (Felin & Zenger, 2014) whereas the coordinator of participants' interactions in both firm sponsored communities and peer-to-peer marketplaces is a focal firm. Firms sponsor the creation of their own user communities such as those created for providing feedback on existing products (e.g. Jeppesen & Frederiksen, 2006) or for the development of new products and involve their employees in the community (e.g. Chatterji & Fabrizio, 2012) Both in peer-to-peer marketplaces and in self-managed user communities participants are individuals. Although in either firm sponsored or self managed user communities, interactions presuppose the possession of specialized knowledge and are primarily based on knowledge exchange (Franke & Shah, 2003; Shah, 2006), in peer-to-peer marketplaces knowledge exchange does not necessarily involve expert knowledge. A commonality across both types of user communities and peer-to-peer marketplaces stems from the lack of ownership rights transfer in participants' interactions.

Having delineated the boundaries of peer-to-peer marketplaces from multi-sided platforms and user communities, I delve deeper into the multi-sided platform, and user innovation literature to identify existing knowledge and theoretical gaps useful for advancing research on peer-to-peer marketplaces.

Multi-Sided Platforms

Research on multi-sided platforms has been carried out primarily by platform economists and subsumed under the broader ‘network economics’ literature, but has gradually begun to attract the attention of organization scholars, appearing in premier strategy journals (e.g. Cennamo & Santalo, 2013; Boudreau & Jeppesen, 2014; Zhu & Iansiti, 2012; Seamans & Zhu, 2013; Thomas et al, 2014), and premier conferences such as the Academy of Management and the Strategic Management Society, both of which have asked scholars to consider the implication of multi-sided platforms for organization research. This early, but growing evidence, suggests that multi-sided platforms are a phenomenon of increasing interest not only in economics but also in organization research.

Two-sided (or multi-sided) platforms operate in two-sided markets, which exhibit network externalities (Rochet & Tirole, 2003b). Multi-sided platforms “enable interactions between end-users, and try to get the two (or multiple) sides on board by appropriately charging each side. That is, platforms court each side while attempting to make, or at least not lose, money overall.” (Rochet & Tirole, 2006: 645). The presence of indirect, or cross-group, network externalities creates a unique challenge for survival. *Indirect* network externalities exist when demand for a product or service depends both on the number of other consumers and producers of a product or service, whereas *direct* network externalities exist when demand depends only on the number of consumers using the same product (Katz & Shapiro, 1985; Gupta et al, 1999). Interdependency between the actions of consumers and suppliers produces “the celebrated chicken-and-egg problem” of recruiting two or more distinct yet interdependent sides of the market (Rochet & Tirole, 2003b: 990).

How do multi-sided platforms resolve the chicken-and-egg problem of participant recruitment? The focus of the platform economics literature on this question has been answered

almost exclusively, and unsurprisingly, through an economics lens. Specifically, platform scholars propose that the chicken and egg problem is resolved when multi-sided platforms set appropriate prices for each side, or price structures,² which influence the willingness of each side to join the platform (e.g. Armstrong, 2006; Caillaud & Jullien, 2003; Hagiu, 2009; Rochet & Tirole, 2003b; 2006; Weyl, 2010). Ultimately, “the price structure affects profits and economic efficiency as well” (Rochet & Tirole, 2006: 648).

In setting appropriate prices structures, typically, multi-sided platforms overcharge the group of users that experience the greatest benefit platform participation, and subsidize or not charge at all the group of users that experiences the least benefit from participation (Bolt & Tieman, 2008; Chen, 2008; Hagiu, 2006; Weyl, 2010). In other words, price structures simultaneously capture value from both sides of the market and incentivize participants to join the platform as long as transacting through the platform decreases participants’ search and transaction costs (Armstrong, 2006; Hagiu, 2006; 2009; Rochet & Tirole, 2002; Rysman, 2009; Sun & Tse, 2007; Weyl, 2010). Theories of platform pricing strategies provide a parsimonious theory for how multi-sided platforms resolve the chicken and egg problem and grow their user base. Yet, pricing strategies do not explain any other strategies that multi-sided platforms pursue to resolve the chicken and egg problem. Indeed, “prices do not accurately convey all information necessary to coordinate economic decisions” (Eckhardt & Shane, 2003: 337). Pricing strategies also provide limited insights into how peer-to-peer marketplaces gain momentum particularly in because in the early stages a peer-to-peer marketplace is more interested in recruiting as many users as possible than charging the few that initially join.

² Whereas total price refers to the total price charged to both sides, price structure refers to “the allocation of the total price between the buyer and seller” (Rochet & Tirole, 2006: 647)

The multi-sided platform literature's focus on pricing strategies provides only a limited explanation of how value is created. Platform scholars generally assume that multi-sided platforms create value by lowering transacting parties' search and transaction costs (Armstrong 2006, Caillaud and Jullien 2003, Evans, 2003; Parker and Van Alstyne 2005, Rochet and Tirole 2003b; 2006). This widely recognized assumption has been questioned by a couple of platform scholars who theorize that some intermediaries purposefully increase search costs by diverting users towards higher profit options (sellers, or stores) instead of making the most efficient match between buyers and sellers (Hagiu & Jullien, 2011). Their argument raises the question of what other mechanisms might allow multi-sided platforms to create value and attract participants especially in the formation stage when network externalities do not yet exist.

The multi-sided platform literature advances economic theory and evidence that seeks to predict the conditions under which the focal firm can attract a greater number of platform participants. However, it does not consider how the 'quality' of participants might affect its growth. Participant quality, or more specifically, customer quality is related to the concept of demand heterogeneity (Adner & Levinthal, 2001), which is seen as an underlying challenge for all networked firms trying to achieve demand economies of scale (Gupta et al, 1999). Defined as the extent to which consumer preferences match the focal firm's offering, customer quality has been found to be a determinant of the strength of indirect network effects in two-sided markets (Zhu & Iansiti, 2012). More specifically, Zhu and Iansiti (2012) have shown that the quality of the customer base of a new entrant in the video game industry increases the new entrant's likelihood of successfully competing head-to-head with incumbents for the same customer segment.

Zhu and Iansiti's (2012) study provides empirical support to Parker and van Alstyne's

(2005) earlier argument that rather than viewing demand heterogeneity as a challenge, multi-sided platforms view it as an opportunity to match products to different types of customers who have different preferences and to capture greater value. These two studies suggest that existing approaches to operationalizing consumer preferences, e.g by estimating the net benefit users experience when they transact through a particular platform (e.g. Armstrong and Wright, 2007; Sun & Tse, 2007), does not fully predict when and why platform participants choose to join a multi-sided platform. In practice, demand heterogeneity likely consists of a richer set of consumer preferences, which peer-to-peer marketplaces may try to match through strategies other than pricing. Taken together, these arguments point to the important, yet under theorized, issue of customer quality, and the strategic tradeoffs likely to emerge between strategies that help increase the number of participants and strategies concerned with attracting the right type of participants.

Yet another strategic challenge facing multi-sided platforms and relevant for peer-to-peer marketplaces stems from sustaining participation among existing members as the user base grows. A recent study has shown that, in the case of video game platforms, strategies for introducing product variety conflict with strategies for securing exclusivity contracts, and decrease game developers' willingness to participate as the community of developers becomes too crowded (Cennamo & Santalo, 2013). Cennamo and Santalo (2013) allude to a 'crowding out' effect that peer-to-peer marketplaces must manage as the number of platform participants grows. However, little theory and evidence on how the focal firm manages the ramification of crowding out effects.

Finally, the multi-sided platform literature makes the assumption that multi-sidedness is a feature of the environment as opposed to a strategic choice (Hagiu & Wright, 2014a). This

assumption goes against many examples of peer-to-peer marketplaces that pursue sharing of assets for a rental fee such as lawnmowers, tools and 3D printers. These peer-to-peer marketplaces choose to be multi-sided in markets that are not inherently multi-sided. Multi-sidedness is also a strategic choice in existing firms transitioning from traditional product-based to platform business models (Altmant & Tripsas, 2015). These observations explain the remarkable growth of peer-to-peer marketplaces in a broad range of markets and further highlight the need to explore the strategies that support their creation and growth.

Next, I turn to a stream of research exploring the challenges and opportunities facing firms that collaborate with user communities. This research is useful for understanding the non-economic benefits that individuals may experience through peer interactions, as well as the strategies that firms pursue to elicit and capture value from such interactions.

User Communities and User Innovation

User communities consist of groups of experts who voluntarily come together to solve complex problems for their own personal or professional interests (Franke & Shah, 2003; Felin & Zenger, 2014). It is worth noting here that user communities are thought to be distinct from brand communities, which allow the focal firm to promote loyalty to its products by enabling interactions among existing customers and brand enthusiasts (Albert, Muniz & O'Guinn, 2001; Min Antorini, Muniz, & Askildsen, 2012). For example, Harley-Davidson coordinates a Harley-Davidson owner community and organizes social events where Harley owners and enthusiasts can interact. The Harley community is a type of firm sponsored user community but differs not a peer-to-peer marketplace because interactions among brand community members do not involve any transactions.

The study of user communities has been fueled by increasing levels of firms' reliance on external stakeholders for carrying out activities traditional reserved for employees or partners (von Hippel, 1986; Chesbrough, 2003). This literature has generated ample theory and evidence of the strategic opportunities and challenges facing firms that seek to collaborate with actors who are volunteers, intrinsically motivated and focused on initiatives that match their own interests as opposed to those of the firm. As a result, it provides useful direction in exploring the control that peer-to-peer marketplaces might try to exercise over their participants, especially as the number of participants grows and the firm must ensure that the outcomes of their interactions align with firm goals.

Research on firm collaborations with user communities is subsumed under the broader umbrella of open innovation research. Open innovation refers to the idea that firms purposefully seek, gather, and integrate external-to-the-firm ideas with internal ones (Chesbrough 2003; 2006). Even though firms have always turned to their external environments for input and ideas, the advent of the internet and social connectivity technologies has promoted firm collaborations with external stakeholders such as user communities (West et al, 2006). Firm collaborations with user communities afford the focal firm opportunities to gain in-depth knowledge about potential customers' demands, as well as access information, ideas, knowledge, and tangible contributions for developing new products or for choosing technologies with commercialization potential (Hienerth et al, 2014; Laursen & Salter, 2006; Urban & von Hippel, 1988). Under certain conditions, involving user communities in innovation processes has been shown to improve firm performance and contribute to competitive advantage (Hienerth et al., 2014; Stam, 2009; Zander & Zander, 2005), as well as increase the likelihood of a successful IPO or acquisition in entrepreneurial firms (Waguespack & Fleming, 2009).

Recent arguments by organization and open innovation scholars have suggested that further study of firm collaborations with user communities can generate new insights not only about their implications for firm innovation outcomes but also about their broader impact on organizational processes (Felin & Zenger, 2014; Puranam, Alexy, & Reitzig, 2014).

Because user communities are typically self-managed, the focal firm faces the challenge of trying to influence the work of user communities in the absence of formal or direct control (O'Mahony & Ferraro, 2007). The lack of firm jurisdiction over self-managed user communities creates a tension between opening firm processes to the contributions of external stakeholders and ensuring that firms can eventually capture relevant and useful contributions (Bogers, 2011; Laursen & Salter, 2014; von Hippel & von Krogh, 2003; West, 2003). A focal firm must thus ensure that its involvement with a user community does not decrease community members' willingness to participate and that the suggestions and incentives given to members for working on firm-specific problems match members' motivations (Jeppesen & Frederiksen, 2006; Jeppesen & Lakhani, 2010; Wiertz & Ruyter, 2007). An approach to solving these challenges is the creation of firm sponsored communities over which sponsoring firms are thought to exercise more control, and play a more active role by serving as creators, coordinators and overseers of the community and its activities (e.g. Chatterji & Fabrizio, 2014; Dahlander & Piezunka, 2014; Jeppesen & Frederiksen, 2006; West & O'Mahony, 2008). However, research on firm sponsored communities is limited to a handful of studies and thus presents only limited application to the study of peer-to-peer marketplaces.

The common challenge in both self managed and firm sponsored user communities entails decisions about how much control, if any at all, the focal firm can exercise, over user communities and how specifically to sustain community members' participation. These

challenges are particularly critical for managing the social interactions that peer-to-peer marketplaces facilitate. While the focal firm may be able to exercise some control over the transactions that occur in the marketplace, exercising control over the ways in which participants interact, either virtually or in person is likely a lot more difficult.

Felin and Zenger (2014) have recently proposed that inducing and influencing participants' interactions can be achieved through the use of particular types of communication channels some of which may be more fit for inducing interactions among participants while others may be more appropriate for communicating between the firm and the community (Felin & Zenger, 2014). Relatedly, Dahlander and Piezunka (2014) propose that firms can take a more active role in guiding participants' attention on initiatives of interest to the focal firm by providing the necessary structures early on, instead of waiting for ideas to gain momentum organically. Their conclusion points, once again, to the purposeful efforts firms might make to influence interactions of external stakeholders.

Other scholars have acknowledged that the success of firm-community collaborations depends on inventing new organizational processes, developing new capabilities and setting in place new structures that support firm-community collaborations (Chesbrough, 2003; Foss, Laursen & Pedersen, 2010; Laursen & Salter, 2006). These processes may include implementation of a "process of criticism and problem solving, that can better retest, modify, and/or affirm the learning" (Lee & Cole, 2003: 644) or put in place "special structures [that] sustain and enforce strong norms in the community" (Lee & Cole, 2003: 646). Together, these studies point to possible paths that peer-to-peer marketplaces may chart in their efforts to attract participants, facilitate social exchanges and sustain those exchanges over time.

In conclusion, research on user communities adopts a knowledge-based view on firm collaborations with external actors. Although most studies have focused on innovation, the forefather of user innovation had predicted that firms' increasing reliance on external stakeholders would have implications for a broad range of firm activities (Chesbrough, 2003). Akin to this idea are the ideas I put forth in this study by drawing attention to peer-to-peer marketplaces as contexts in which consumers have extensive involvement in firm activities throughout the value chain.

Methods

Research Design. To explore the under-researched and under-theorized phenomenon of the peer-to-peer marketplaces, I carry out an inductive multi-case study for building new theory (Eisenhardt, 1989; Yin, 1994). Developing new theory involves intimate knowledge of the data (Glaser & Strauss 1967) and at the same time, acknowledges existing research (Eisenhardt & Graebner, 2007). Inductive theory building takes a critical stance towards a priori assumptions in existing research and thus seeks to identify theoretically relevant concepts that cannot be specified a priori (Eisenhardt, 1989; Eisenhardt & Graebner, 2007). Lastly, multiple cases and comparative analysis facilitate the development of robust theory that is “more deeply grounded in varied empirical evidence” than single cases thereby enhancing the generalizability of emerging theory (Eisenhardt & Graebner, 2007: 27).

Case Sampling. To examine both the early-stage challenges of building customer communities as well as the later stages of growth in sustaining customer communities, I selected two sets of cases. The first sample consisted of nascent ventures launched within a year or less of the start of data collection. These firms pursued efforts to build customer communities without which they could not survive. The second sample consisted of 5 later stage start-ups, which had

been launched 2-9 year before the time data collection began. All companies were major players in two emerging categories, home- and car-sharing, at about the same time period. Thus, industry effects or the impact of broader economic conditions are naturally controlled (e.g. Ambos & Birkinshaw, 2010). Specifically, I collected data (data collection is currently ongoing) from Airbnb (founded in 2008), Homeaway (founded in 2005), Lyft (founded in 2012), Sidecar (founded in 2012) and Uber (founded in 2009). Having selecting later stage start-ups and their ability to build vibrant customer communities, I observed the challenges of community building after entrepreneurial firms were able to overcome the initial hurdles of acquiring first customers and resource scarcity.

Data & Data Collection. Data collection is ongoing. 15 nascent firms have been interviewed so far. Company founders, founding team members, and users serve as informants. Follow-up interviews are being carried out in 1-2 month intervals to capture evolving strategic challenges. An additional 45 interviews will be completed in the next 6 months. Interview data are complemented with Twitter feeds, which reflect a means of public-facing communication that seeks to influence customers' perceptions of the focal firm's offering.

Data Analysis. Data are analyzed using grounded theory development techniques (Eisenhardt & Graebner, 2007; Glaser & Strauss, 1967) and text analysis software (Pennebaker & King, 1999; Tausczik & Pennebaker, 2010). Grounded theory techniques involve iterations between the data and existing literature aiming at developing inductively new relationships (Eisenhardt, 1989). These iterations involve assigning codes to sections of text using terms that remain true to the informants' use of language--also known as "in vivo" codes. Initial codes are then gradually grouped more abstract categories until the majority of observations fit are

classified into theoretically relevant categories or themes (Boyatzis, 1998; Headland, Pike, & Harris, 1990).

Text analysis techniques using software are increasingly common for analyzing large corpora of text. Linguistic Inquiry Word Count (LIWC) is a text analysis that has been used in strategy research to analyze archival data such as press releases and letters to shareholders (e.g. Pfarrer, Pollock, & Rindova, 2010). As opposed to the content, LIWC examines language style. Specifically, LIWC identifies the frequency of categories of context-independent words such as pronouns, prepositions, negations, quantifiers and other categories of words. 20 years of research primarily in social psychology has found relations between these categories and social, affective, cognitive, perceptual and biological processes (Pennebaker & King, 1999; Tausczik & Pennebaker, 2010). It has been used to explain both individual and collective psychological, emotional, and cognitive processes (Pennebaker & King, 1999; Tausczik & Pennebaker, 2010).

Findings

Interview data with start-up founders reveal a recurrent and central strategic challenge: balancing the growth of the community against monitoring its quality. The issue of customer quality has been theorized in the literature as a challenge in monitoring the relevance of enrolled customers to the firm's offering (Zhu & Iansiti, 2012) and their willingness to engage with one another in ways that create value for one another (Hagiu, 2007b). Here, balancing growth against quality is a challenge firms have to resolve alongside growing the size of the community.

Cross-case analyses reveal two common themes in how firms resolve this challenge. First, *community organizer training* processes involved building relationships, and providing training and support to the most active members of the community. Founders and their teams trained

community organizers informally, through ‘hand holding’ activities such as manual monitoring of their contributions while providing them with frequent and immediate feedback that positively reinforced desirable behavior. While almost all firms had drafted and communicated penalties for non-compliance, rarely did they resort to them. They focused instead on making sure community organizers benefited the most from community participation by providing customers with guidance, by asking them for frequent feedback and by providing gradual rewards in the form of social recognition. When specialized expertise was a key ingredient of community exchanges, firms rewarded recognized community organizers with ‘badges’ of expertise, but did so gradually, i.e. by allowing them to advance through different levels. This step-by-step approach allowed firms to maintain member involvement and to create different community subgroups characterized by the quality of their contributions. For example, the community organizers’ achievements were made public (whenever confidentiality agreements allowed them) in newsletters, company websites and social media. Training and supporting community organizers served as a quality control mechanism by supporting the most motivated customers become model members with the expectations that other members would follow in their steps. Thus, firms displaced part of the customer acquisition cost onto community organizers whose contributions were leveraged as growth resources.

The second set of processes focused on community member education, which aimed at shaping broader community behavior. Firms created ‘rules of engagement’-- non-contractual guidelines created by the firm about how members were expected to behave within the community. Firms viewed rules of engagement as a substitute to official rules and a means for placing accountability in the hands of the community. The rules of engagement communicated a community culture and promoted peer accountability, encouraging members to identify and

report non-complying members. Community member education also entailed dissemination of content about becoming a better professional such as tutorials or tips on increasing expertise or positive reputation within the community. Others showcased success stories on websites and social media as evidence of the outcomes of community participation.

Discussion And Conclusion

In sum, these early-stage findings suggest that non-pecuniary processes are indeed important in the creation and growth of peer-to-peer marketplaces. Moreover, they suggest that these processes include, but are not limited to, empowerment of community organizers, and education of the broader community about how its members can contribute to it in ways that create value for the entire collective. Through firm initiated public discourse, firms highlight social and emotional benefits that accrue to community members such as inclusion, belonging, sharing, and connection. Taken together, these early-stage findings point to the important role of explicating the non-pecuniary incentives, rewards and broader exchanges that support firm efforts to build customer communities.

Although in this paper I have discussed community building for entrepreneurial firms and have employed an inductive and qualitative research design which limits generalizability of findings, it is likely that that more mature firms seeking to enhance demand for their products will benefit from exploring the non pecuniary processes of community building. As social connectivity and collaboration devices and software are further developed, customer communities and firms are likely to find more channels through which to co-create and co-capture value.

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